SEQUENCE LISTING

<110> Boyes, Douglas
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<120> METHODS FOR IMPROVING PLANT AGRONOMICAL TRAITS BY ALTERING THE EXPRESSION OR ACTIVITY OF PLANT G-PROTEIN ALPHA AND BETA SUBUNITS

<130> 2155US

<150> 60/392,730
<151> 2002-06-28

<150> 60/445,208
<151> 2003-02-05

<160> 78

<170> PatentIn version 3.2

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atcagtggat caaacccaaa ctggtttata tctggttcat gcgattccac agcacggttg 900

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Asp Thr Asp Val Ala Arg Tyr Ser Ala Ala Gln Gly Arg Thr Arg Val
35 40 45

Ser Phe Gly Ala Thr Asp Leu Val Cys Cys Arg Thr Leu Gln Gly His
50 55 60

Thr Gly Lys Val Tyr Ser Leu Asp Trp Thr Pro Glu Arg Asn Arg Ile
65 70 75 80

Val Ser Ala Ser Gln Asp Gly Arg Leu Ile Val Trp Asn Ala Leu Thr
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Ser Gln Lys Thr His Ala Ile Lys Leu Pro Cys Ala Trp Val Met Thr
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Ser Val Cys Ser Ile Phe Ser Leu Ser Ser Thr Ala Asp Lys Asp Gly
    130                 135                 140

Thr Val Pro Val Ser Arg Met Leu Thr Gly His Arg Gly Tyr Val Ser
145                 150                 155                 160

Cys Cys Gln Tyr Val Pro Asn Glu Asp Ala His Leu Ile Thr Ser Ser
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Gly Asp Gln Thr Cys Ile Leu Trp Asp Val Thr Thr Gly Leu Lys Thr
            180                 185                 190

Ser Val Phe Gly Gly Glu Phe Gln Ser Gly His Thr Ala Asp Val Leu
        195                 200                 205

Ser Val Ser Ile Ser Gly Ser Asn Pro Asn Trp Phe Ile Ser Gly Ser
    210                 215                 220

Cys Asp Ser Thr Ala Arg Leu Trp Asp Thr Arg Ala Ala Ser Arg Ala
225                 230                 235                 240

Val Arg Thr Phe His Gly His Glu Gly Asp Val Asn Thr Val Lys Phe
                245                 250                 255

Phe Pro Asp Gly Tyr Arg Phe Gly Thr Gly Ser Asp Asp Gly Thr Cys
            260                 265                 270

Arg Leu Tyr Asp Ile Arg Thr Gly His Gln Leu Gln Val Tyr Gln Pro
        275                 280                 285

His Gly Asp Gly Glu Asn Gly Pro Val Thr Ser Ile Ala Phe Ser Val
    290                 295                 300

Ser Gly Arg Leu Leu Phe Ala Gly Tyr Ala Ser Asn Asn Thr Cys Tyr
305                 310                 315                 320

Val Trp Asp Thr Leu Leu Gly Glu Val Val Leu Asp Leu Gly Leu Gln
                325                 330                 335

Gln Asp Ser His Arg Asn Arg Ile Ser Cys Leu Gly Leu Ser Ala Asp
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acactatgga aggatcctgc aattcaggaa acttgtgctc gtggtaatga gcttcaggtt 480

cctgattgta cgaaatatct gatggagaac ttgaagagac tatcagatat aaattatatt 540

ccaactaagg aggatgtact ttatgcaaga gttcgcacaa ctggtgtcgt ggaaatacag 600

ttcagccctg tgggagagaa taaaaaaagt ggtgaagtgt accgattgtt tgacgtgggt 660

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atgatggaga ccaaggaatt attcgactgg gtcctgaaac aaccctgttt tgagaaaaca 840

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ttgaacgttt gcgagtggtt cagagattac caaccagttt caagtgggaa acaagagatt 960

gagcatgcat acgagtttgt gaagaagaag tttgaggagt tatattacca gaacacggcg 1020

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Lys Ala Glu Lys His Ile Arg Lys Leu Leu Leu Leu Gly Ala Gly Glu
35 40 45

Ser Gly Lys Ser Thr Ile Phe Lys Gln Ile Lys Leu Leu Phe Gln Thr
50 55 60

Gly Phe Asp Glu Gly Glu Leu Lys Ser Tyr Val Pro Val Ile His Ala
65 70 75 80

Asn Val Tyr Gln Thr Ile Lys Leu Leu His Asp Gly Thr Lys Glu Phe
85 90 95

Ala Gln Asn Glu Thr Asp Ser Ala Lys Tyr Met Leu Ser Ser Glu Ser
100 105 110

Ile Ala Ile Gly Glu Lys Leu Ser Glu Ile Gly Gly Arg Leu Asp Tyr
115 120 125

Pro Arg Leu Thr Lys Asp Ile Ala Glu Gly Ile Glu Thr Leu Trp Lys
130 135 140

Asp Pro Ala Ile Gln Glu Thr Cys Ala Arg Gly Asn Glu Leu Gln Val
145 150 155 160

Pro Asp Cys Thr Lys Tyr Leu Met Glu Asn Leu Lys Arg Leu Ser Asp
165 170 175

Ile Asn Tyr Ile Pro Thr Lys Glu Asp Val Leu Tyr Ala Arg Val Arg
180 185 190

Thr Thr Gly Val Val Glu Ile Gln Phe Ser Pro Val Gly Glu Asn Lys
195 200 205

Lys Ser Gly Glu Val Tyr Arg Leu Phe Asp Val Gly Gly Gln Arg Asn
210 215 220

Glu Arg Arg Lys Trp Ile His Leu Phe Glu Gly Val Thr Ala Val Ile
225 230 235 240

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Phe Cys Ala Ala Ile Ser Glu Tyr Asp Gln Thr Leu Phe Glu Asp Glu
                245                 250                 255

Gln Lys Asn Arg Met Met Glu Thr Lys Glu Leu Phe Asp Trp Val Leu
            260                 265                 270

Lys Gln Pro Cys Phe Glu Lys Thr Ser Phe Met Leu Phe Leu Asn Lys
        275                 280                 285

Phe Asp Ile Phe Glu Lys Lys Val Leu Asp Val Pro Leu Asn Val Cys
    290                 295                 300

Glu Trp Phe Arg Asp Tyr Gln Pro Val Ser Ser Gly Lys Gln Glu Ile
305                 310                 315                 320

Glu His Ala Tyr Glu Phe Val Lys Lys Lys Phe Glu Glu Leu Tyr Tyr
                325                 330                 335

Gln Asn Thr Ala Pro Asp Arg Val Asp Arg Val Phe Lys Ile Tyr Arg
            340                 345                 350

Thr Thr Ala Leu Asp Gln Lys Leu Val Lys Lys Thr Phe Lys Leu Val
        355                 360                 365

Asp Glu Thr Leu Arg Arg Arg Asn Leu Leu Glu Ala Gly Leu Leu
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<212> DNA
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ggcacatggc cgctacacag actgtaaatg atctccgtga aaaacttaag cagaagcgtc    180

tccaattact cgacacagat gtttctgggt atgcaaagac gcaaggtaaa actccggtaa    240

cgttcggccc aacagatcta gtttgttgta ggatcctgca aggacacact ggaaaggtct    300

attcactgga ctggactcct gaaaaaaatc gtatagtcag tgcatcccaa gatggtagat    360

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gcctaagaac ttctgtgttt ggaggtgagt ttcaatctgg gcacactgca gatgtatcaa 720

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tggtcctaaa cttaggatca gttcaaaact ctcatgaagg gcgaataagt tgtctgggac 1140

tgtcagctga tggaagtgcc ttatgtacag gaagttggga tacaaacctg aagatttggg 1200

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<213> Solanum tuberosum

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Asp Thr Asp Val Ser Gly Tyr Ala Lys Thr Gln Gly Lys Thr Pro Val
35 40 45

Thr Phe Gly Pro Thr Asp Leu Val Cys Cys Arg Ile Leu Gln Gly His
50 55 60

Thr Gly Lys Val Tyr Ser Leu Asp Trp Thr Pro Glu Lys Asn Arg Ile
65 70 75 80

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Val Ser Ala Ser Gln Asp Gly Arg Leu Ile Val Trp Asn Ala Leu Thr
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Ser Gln Lys Thr His Ala Ile Lys Leu Pro Cys Ala Trp Val Met Thr
            100                 105                 110

Cys Ala Phe Ser Pro Ser Gly Gln Ser Val Ala Cys Gly Gly Leu Asp
        115                 120                 125

Ser Ala Cys Ser Ile Phe Asn Leu Asn Ser Pro Ile Asp Lys Asp Gly
    130                 135                 140

Ile His Pro Val Ser Arg Met Leu Ser Gly His Lys Gly Tyr Val Ser
145                 150                 155                 160

Ser Cys Gln Tyr Val Pro Asp Glu Asp Thr His Leu Ile Thr Ser Ser
                165                 170                 175

Gly Asp Gln Thr Cys Val Leu Trp Asp Ile Thr Thr Gly Leu Arg Thr
            180                 185                 190

Ser Val Phe Gly Gly Glu Phe Gln Ser Gly His Thr Ala Asp Val Ser
        195                 200                 205

Ser Val Ser Ile Ser Ser Ser Asn Pro Lys Leu Phe Val Ser Gly Ser
    210                 215                 220

Cys Asp Thr Thr Ala Arg Leu Trp Asp Thr Arg Val Ala Ser Arg Ala
225                 230                 235                 240

Gln Arg Thr Phe His Gly His Glu Ser Asp Val Thr Thr Val Lys Phe
                245                 250                 255

Phe Pro Asp Gly Asn Arg Phe Gly Thr Gly Ser Asp Asp Gly Ser Cys
            260                 265                 270

Arg Leu Phe Asp Ile Arg Thr Gly His Gln Leu Gln Val Tyr Asn Gln
        275                 280                 285

Pro His Gly Asp Gly Asp Ile Pro His Val Thr Ser Ile Ala Phe Ser
    290                 295                 300

Ile Ser Gly Arg Leu Leu Phe Val Gly Tyr Ser Asn Gly Asp Cys Tyr
305                 310                 315                 320
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Val Trp Asp Thr Leu Leu Ala Lys Val Val Leu Asn Leu Gly Ser Val
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Gln Asn Ser His Glu Gly Arg Ile Ser Cys Leu Gly Leu Ser Ala Asp
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actggaaagg tctattcact ggactggact cctgaaaaaa atcgtatagt cagtgcatcc    300

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actggttcag atgatggaag ctgcagatta tttgacatta ggactggaca ccagctgcaa    900

gtatacaacc aaccgcatgg tgacggtgac atccctcatg tgacttccat ggcattttct    960

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Asp Thr Asp Val Ser Gly Tyr Ala Lys Arg Gln Gly Lys Ser Pro Val
35 40 45

Thr Phe Gly Pro Thr Asp Leu Val Cys Cys Arg Ile Leu Gln Gly His
50 55 60

Thr Gly Lys Val Tyr Ser Leu Asp Trp Thr Pro Glu Lys Asn Arg Ile
65 70 75 80

Val Ser Ala Ser Gln Asp Gly Arg Leu Ile Val Trp Asn Ala Leu Thr
85 90 95

Ser Gln Lys Thr His Ala Ile Lys Leu Pro Cys Ala Trp Val Met Thr
100 105 110

Cys Ala Phe Ser Pro Ser Gly Gln Ser Val Ala Cys Gly Gly Leu Asp
115 120 125

Ser Ala Cys Ser Ile Phe Asn Leu Asn Ser Pro Ile Asp Lys Asp Gly
130 135 140

Ile His Pro Val Ser Arg Met Leu Ser Gly His Lys Gly Tyr Val Ser
145 150 155 160

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Ser Cys Gln Tyr Val Pro Asp Glu Asp Thr His Leu Ile Thr Ser Ser
                165                 170                 175

Gly Asp Gln Thr Cys Val Leu Trp Asp Ile Thr Thr Gly Leu Arg Thr
            180                 185                 190

Ser Val Phe Gly Gly Glu Phe Gln Ser Gly His Thr Ala Asp Val Leu
        195                 200                 205

Ser Val Ser Ile Ser Ser Ser Asn Pro Lys Leu Phe Val Ser Gly Ser
    210                 215                 220

Cys Asp Thr Thr Ala Arg Leu Trp Asp Thr Arg Val Ala Ser Arg Ala
225                 230                 235                 240

Gln Arg Thr Phe His Gly His Glu Ser Asp Val Asn Thr Val Lys Phe
                245                 250                 255

Phe Pro Asp Gly Asn Arg Phe Gly Thr Gly Ser Asp Asp Gly Ser Cys
            260                 265                 270

Arg Leu Phe Asp Ile Arg Thr Gly His Gln Leu Gln Val Tyr Asn Gln
        275                 280                 285

Pro His Gly Asp Gly Asp Ile Pro His Val Thr Ser Met Ala Phe Ser
    290                 295                 300

Ile Ser Gly Arg Leu Leu Phe Val Gly Tyr Ser Asn Gly Asp Cys Tyr
305                 310                 315                 320

Val Trp Asp Thr Leu Leu Ala Lys Val Val Leu Asn Leu Gly Ser Val
                325                 330                 335

Gln Asn Ser His Glu Gly Arg Ile Ser Cys Leu Gly Leu Ser Ala Asp
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Gly Ser Ala Leu Cys Thr Gly Ser Trp Asp Thr Asn Leu Lys Ile Trp
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Ala Phe Gly Gly His Arg Ser Val Val
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tgctctcaca agccagaaaa cccatgcaat taagcttccg tgtgcttggg ttatgacctg 480

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<213> Nicotiana tabacum

<400> 10

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20 25 30

Asp Thr Asp Val Ser Gly Tyr Ala Arg Ser Gln Gly Lys Thr Pro Val
35 40 45

Thr Phe Gly Pro Thr Asp Leu Val Cys Cys Arg Ile Leu Gln Gly His
50 55 60

Thr Gly Lys Val Tyr Ser Leu Asp Trp Thr Pro Glu Lys Asn Arg Ile
65 70 75 80

Val Ser Ala Ser Gln Asp Gly Arg Leu Ile Val Trp Asn Ala Leu Thr
85 90 95

Ser Gln Lys Thr His Ala Ile Lys Leu Pro Cys Ala Trp Val Met Thr
100 105 110

Cys Ala Phe Ser Pro Ser Gly Gln Ser Val Ala Cys Gly Gly Leu Asp
115 120 125

Ser Val Cys Ser Ile Phe Asn Leu Asn Ser Pro Ile Asp Lys Asp Gly
130 135 140

Asn His Pro Val Ser Arg Met Leu Ser Gly His Lys Gly Tyr Val Ser
145 150 155 160

Ser Cys Gln Tyr Val Pro Asp Glu Asp Thr His Leu Ile Thr Ser Ser
165 170 175

Gly Asp Gln Thr Cys Val Leu Trp Asp Ile Thr Thr Gly Leu Arg Thr
180 185 190

Ser Val Phe Gly Gly Glu Phe Gln Ser Gly His Thr Ala Asp Val Gln
195 200 205

Ser Val Ser Ile Ser Ser Ser Asn Pro Arg Leu Phe Val Ser Gly Ser
210 215 220

Cys Asp Thr Thr Ala Gly Leu Trp Asp Thr Arg Val Ala Ser Arg Ala
225 230 235 240

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Gln Arg Thr Phe Tyr Gly His Glu Gly Asp Val Asn Thr Val Lys Phe
                245                 250                 255

Ser Pro Asp Gly Asn Arg Phe Gly Thr Gly Ser Glu Asp Gly Thr Cys
            260                 265                 270

Arg Leu Phe Asp Ile Arg Thr Gly His Gln Leu Gln Val Tyr Tyr Gln
        275                 280                 285

Pro His Gly Asp Gly Asp Ile Pro His Val Thr Ser Met Ala Phe Ser
    290                 295                 300

Ile Ser Gly Arg Leu Leu Phe Val Gly Tyr Ser Asn Gly Asp Cys Tyr
305                 310                 315                 320

Val Trp Asp Thr Leu Leu Ala Lys Val Val Leu Asn Leu Gly Gly Val
                325                 330                 335

Gln Asn Ser His Glu Gly Arg Ile Ser Cys Leu Gly Leu Ser Ala Asp
            340                 345                 350

Gly Ser Ala Leu Cys Thr Gly Ser Trp Asp Thr Asn Leu Lys Ile Trp
        355                 360                 365

Ala Phe Gly Gly His Arg Ser Val Ile
    370                 375
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<210> 11
<211> 1560
<212> DNA
<213> Nicotiana tabacum

<400> 11

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gccactgact cagcctgact cgttctctcc tctcctcttc agaaaaaacc ctaatttaat     60

caacgattgt tccacaatat tgagattttc agaagaatta tgtttgaatt tccttgaaaa    120

tgtcagtgac agagctgaaa gagcggcata tggccgctac acagactgta agtgatctcc    180

gtgaaaaact taagcagaag cgtctccaat tactcgacac tgatgtttct ggatatgcaa    240

ggtcgcaagg taaaactccg gtcacctttg gcccaacaga tctggtttgt tgtaggatcc    300

tgcaaggaca cactggaaag gtatattcac tggattggac tccagaaaag aatcgtatag    360

tcagtgcatc ccaagatggc agattaatag tgtggaatgc tctcacaagc cagaaaaccc    420

atgcaattaa gcttccgtgt gcttgggtta tgacctgcgc cttctctcct agtgggcagt    480

ctgttgcctg cggtggcctt gacagtgtct gctctatcta caacttaaat tcgccaatcg    540
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ataaggatgg gaaccatcct gtatcaagaa tgcttagtgg gcataagggt tatgtgtctt 600

cctgtcaata tgttccagat gaggatactc acctaataac tagttctggt gatcaaacat 660

gtgtcctttg ggatataact actggtctaa gaacttctgt ctttggaggt gagtttcaat 720

ccgggcacac tgcagatgta caaagtgtct caattagttc atcaaacccc agactgtttg 780

tatctgggtc ctgtgacaca actgctcgac tgtgggacaa ccgagttgct agtcgagctc 840

aacgaacatt ttatggtcac gagggagatg ttaatactgt aaagttcttc cctgatggta 900

atagatttgg aactggttca gaggatggaa cctgcagatt atttgacatt aggactggac 960

accagctgca agtgtactac cagccgcatg gtgatggtga tatccctcat gtgacttcca 1020

tggcattttc tatctcaggc cgtcttctct ttgtcggata ctcaaatggt gattgttatg 1080

tgtgggacac cctattagca aaggtggtcc taaacttggg aggagttcaa aactctcatg 1140

aagggcgaat aagttgcctg ggactgtcag ctgatggaag cgccttatgt acaggaagtt 1200

gggatacaaa cctgaagatt tgggcttttg gagggacaga agtgtgatct gattgatgaa 1260

acacctcatt ctgttattta attcctgtcc cttttcattc tcattttctt tcatagctag 1320

cctattattc gcgtttcctt tggcattgtc ataacctgta gatctcttgt attccagtta 1380

atatatcagg cagagaaacc aaactgttcc atttgcgatc atatgaatct gacaaatatt 1440

actggatcag caccagttgt aaagatagcc tgtttggtcc aattcggcac gcgtttttt 1500

ttttttttt ttttttttt ttttttttt ttttttttt ttttttttt ttttttttt 1560

<210> 12
<211> 375
<212> PRT
<213> Nicotiana tabacum

<400> 12

Met Ser Val Thr Glu Leu Lys Glu Arg His Met Ala Ala Thr Gln Thr
1 5 10 15

Val Ser Asp Leu Arg Glu Lys Leu Lys Gln Lys Arg Leu Gln Leu Leu
20 25 30

Asp Thr Asp Val Ser Gly Tyr Ala Arg Ser Gln Gly Lys Thr Pro Val
35 40 45

Thr Phe Gly Pro Thr Asp Leu Val Cys Cys Arg Ile Leu Gln Gly His
50 55 60

Thr Gly Lys Val Tyr Ser Leu Asp Trp Thr Pro Glu Lys Asn Arg Ile
65 70 75 80

```
Val Ser Ala Ser Gln Asp Gly Arg Leu Ile Val Trp Asn Ala Leu Thr
                85                  90                  95

Ser Gln Lys Thr His Ala Ile Lys Leu Pro Cys Ala Trp Val Met Thr
            100                 105                 110

Cys Ala Phe Ser Pro Ser Gly Gln Ser Val Ala Cys Gly Gly Leu Asp
        115                 120                 125

Ser Val Cys Ser Ile Tyr Asn Leu Asn Ser Pro Ile Asp Lys Asp Gly
    130                 135                 140

Asn His Pro Val Ser Arg Met Leu Ser Gly His Lys Gly Tyr Val Ser
145                 150                 155                 160

Ser Cys Gln Tyr Val Pro Asp Glu Asp Thr His Leu Ile Thr Ser Ser
                165                 170                 175

Gly Asp Gln Thr Cys Val Leu Trp Asp Ile Thr Thr Gly Leu Arg Thr
            180                 185                 190

Ser Val Phe Gly Gly Glu Phe Gln Ser Gly His Thr Ala Asp Val Gln
        195                 200                 205

Ser Val Ser Ile Ser Ser Ser Asn Pro Arg Leu Phe Val Ser Gly Ser
    210                 215                 220

Cys Asp Thr Thr Ala Arg Leu Trp Asp Asn Arg Val Ala Ser Arg Ala
225                 230                 235                 240

Gln Arg Thr Phe Tyr Gly His Glu Gly Asp Val Asn Thr Val Lys Phe
                245                 250                 255

Phe Pro Asp Gly Asn Arg Phe Gly Thr Gly Ser Glu Asp Gly Thr Cys
            260                 265                 270

Arg Leu Phe Asp Ile Arg Thr Gly His Gln Leu Gln Val Tyr Tyr Gln
        275                 280                 285

Pro His Gly Asp Gly Asp Ile Pro His Val Thr Ser Met Ala Phe Ser
    290                 295                 300

Ile Ser Gly Arg Leu Leu Phe Val Gly Tyr Ser Asn Gly Asp Cys Tyr
305                 310                 315                 320
```

```
Val Trp Asp Thr Leu Leu Ala Lys Val Val Leu Asn Leu Gly Gly Val
                325                 330                 335

Gln Asn Ser His Glu Gly Arg Ile Ser Cys Leu Gly Leu Ser Ala Asp
            340                 345                 350

Gly Ser Ala Leu Cys Thr Gly Ser Trp Asp Thr Asn Leu Lys Ile Trp
        355                 360                 365

Ala Phe Gly Gly Thr Glu Val
    370                 375
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<210> 13
<211> 1434
<212> DNA
<213> Nicotiana tabacum

<400> 13

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gaaccctaat ttaatcaacc ctttttccac gatattgaga ttttcagaag aattatgttt     60

gaatttcctt gaaaatgtca gtgaaagagc tgaaagagcg gcatatggcc gctacacaaa    120

ctgtaaatga tctccgtgaa aaacttaagc agaagcgtct ccaattactc gacactgatg    180

tatctgggta tgcaaggtcg caaggtaaaa ctccggtcat ctttggccca acagatctgg    240

tttgttgtag gatcctgcaa ggacacactg gaaaggtata ttcactggat tggactccag    300

aaaagaatcg tatagtcagt gcatcccaag atggcagatt aatagtgtgg aatgctctca    360

caagccagaa aacccatgca attaagcttc catgtgcttg ggttatgacc tgcgccttct    420

ctcctagtgg gcagtctgtt gcctgcggtg gccttgacag tgtctgctct atcttcaact    480

taaattcacc gatcgataag gatgggaacc atcctgtatc aagaatgctt agtgggcata    540

aggggtatgt gtcttcctgt cagtatgttc cagatgagga tactcacgta ataactagtt    600

ctggtgatca aacatgtgtc ctttgggata taactactgg cttaagaact tctgtctttg    660

gaggtgagtt tcaatccggg cacaccgcag atgtacaaag tgtctcaatt agttcatcaa    720

accccagact gtttgtgtct gggtcctgtg actcaactgc tcgactatgg gacacccgag    780

ttgctagtcg agctcaacga acattttatg gtcatgaggg agatgttaat actgtaaagt    840

tcttccctga tggtaataga tttggaactg gttcagatga tggaacctgc agattatttg    900

acattaggac tggacaccag ctgcaagtgt actaccagcc gcatggtgat ggtgatatcc    960

ctcatgtgac ttccatggca ttttctatct caggccgtct tctctttgtc gggtactcaa   1020

atggtgattg ttatgtgtgg gacaccctat tagcaaaggt ggtcctaaac ttgggagcag   1080

ttcaaaactc tcatgaaggg cgaataagtt gcctgggact gtcagctgat gggagcgcct   1140

tatgtacagg aagttgggat acaaacctga agatttgggc ttttggaggg cacagaagtg   1200
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tgatctgaat gatgaaacac ctcattctgt tatttaattc ctgtcccttt tcattctcat 1260

tttctttcat agctagccta ttattcgcgt ttcctttggc attgtcataa cctgtagatc 1320

tcttgtattc cagttaatat atcaggcaga gaaaccaaac tgttccactt gtgatcatat 1380

gtgcgatcat atgaaaatga caaatattac tggatcaaaa aaaaaaaaaa aaaa 1434

<210> 14
<211> 377
<212> PRT
<213> Nicotiana tabacum

<400> 14

Met Ser Val Lys Glu Leu Lys Glu Arg His Met Ala Ala Thr Gln Thr
1 5 10 15

Val Asn Asp Leu Arg Glu Lys Leu Lys Gln Lys Arg Leu Gln Leu Leu
20 25 30

Asp Thr Asp Val Ser Gly Tyr Ala Arg Ser Gln Gly Lys Thr Pro Val
35 40 45

Ile Phe Gly Pro Thr Asp Leu Val Cys Cys Arg Ile Leu Gln Gly His
50 55 60

Thr Gly Lys Val Tyr Ser Leu Asp Trp Thr Pro Glu Lys Asn Arg Ile
65 70 75 80

Val Ser Ala Ser Gln Asp Gly Arg Leu Ile Val Trp Asn Ala Leu Thr
85 90 95

Ser Gln Lys Thr His Ala Ile Lys Leu Pro Cys Ala Trp Val Met Thr
100 105 110

Cys Ala Phe Ser Pro Ser Gly Gln Ser Val Ala Cys Gly Gly Leu Asp
115 120 125

Ser Val Cys Ser Ile Phe Asn Leu Asn Ser Pro Ile Asp Lys Asp Gly
130 135 140

Asn His Pro Val Ser Arg Met Leu Ser Gly His Lys Gly Tyr Val Ser
145 150 155 160

Ser Cys Gln Tyr Val Pro Asp Glu Asp Thr His Val Ile Thr Ser Ser
165 170 175

```
Gly Asp Gln Thr Cys Val Leu Trp Asp Ile Thr Thr Gly Leu Arg Thr
            180                 185                 190

Ser Val Phe Gly Gly Glu Phe Gln Ser Gly His Thr Ala Asp Val Gln
        195                 200                 205

Ser Val Ser Ile Ser Ser Ser Asn Pro Arg Leu Phe Val Ser Gly Ser
    210                 215                 220

Cys Asp Ser Thr Ala Arg Leu Trp Asp Thr Arg Val Ala Ser Arg Ala
225                 230                 235                 240

Gln Arg Thr Phe Tyr Gly His Glu Gly Asp Val Asn Thr Val Lys Phe
                245                 250                 255

Phe Pro Asp Gly Asn Arg Phe Gly Thr Gly Ser Asp Asp Gly Thr Cys
            260                 265                 270

Arg Leu Phe Asp Ile Arg Thr Gly His Gln Leu Gln Val Tyr Tyr Gln
        275                 280                 285

Pro His Gly Asp Gly Asp Ile Pro His Val Thr Ser Met Ala Phe Ser
    290                 295                 300

Ile Ser Gly Arg Leu Leu Phe Val Gly Tyr Ser Asn Gly Asp Cys Tyr
305                 310                 315                 320

Val Trp Asp Thr Leu Leu Ala Lys Val Val Leu Asn Leu Gly Ala Val
                325                 330                 335

Gln Asn Ser His Glu Gly Arg Ile Ser Cys Leu Gly Leu Ser Ala Asp
            340                 345                 350

Gly Ser Ala Leu Cys Thr Gly Ser Trp Asp Thr Asn Leu Lys Ile Trp
        355                 360                 365

Ala Phe Gly Gly His Arg Ser Val Ile
    370                 375
```

<210> 15
<211> 1430
<212> DNA
<213> Nicotiana tabacum

<400> 15
cccctaattt aatcaacgat tgttccacaa tattgagatt ttcagaagaa ttatgtttga 60

atttccttga aaatgtcagt gacagagctg aaagagcggc atatggccgc tacacagact 120

gtaaatgatc tccgtgaaaa acttaagcag aagcgtctcc aattactcga cactgatgtt 180

tctggatatg caaggtcgca aggtaaaact ccggtcacct ttggcccaac agatctggtt 240

tgttgtagga tcctgcaagg acacactgga aaggtatatt cactggattg gactccagaa 300

aagaatcgta tagtcagtgc atcccaagat ggcagattaa tagtgtggaa tgctctcaca 360

agccagaaaa cccatgcaat taagcttccg tgtgcttggg ttatgacctg cgccttctct 420

cctagtgggc agtctgttgc ctgcggtggc cttgacagtg tctgctctat cttcaactta 480

aattcgccaa tcgataagga tgggaaccat cctgtatcaa gaatgcttag tgggcataag 540

ggttatgtgt cttcctgtca atatgttcca gatgaggata ctcacctaat aactagttct 600

ggtgatcaaa catgtgtcct ttgggatata actactggtc taagaacttc tgtctttgga 660

ggtgagtttc aatccgggca cactgcagat gtacaaagtg tctcaattag ttcatcaaac 720

cccagactgt ttgtatctgg gtcctgtgac acaactgctc gactgtggga cacccgagtt 780

gctagtcgag ctcaacgaac attttatggt cacgagggag atgttaatac tgtaaagttc 840

ttccctgatg gtaatagatt tggaactggt tcagaggatg gaacctgcag attatttgac 900

attaggactg aacaccagct gcaagtgtac taccagccgc atggtgatgg tgatatccct 960

catgtgactt ccatggcatt ttctatctca ggccgtcttc tctttgtcgg atactcaaat 1020

ggtgattgtt atgtgtggga caccctatta gcaaaggtgg tcctaaactt gggaggagtt 1080

caaaactctc atgaagggcg aataagttgc ctgggactgt cagctgatgg aagcgcctta 1140

tgtacaggaa gttgggatac aaacctgaag atttgggctt ttggagggca cagaagtgtg 1200

atctgattga tgaaacacct cattctgtta tttaattcct gtccctttc attctcattt 1260

tctttcatag ctagcctatt attcgcgttt cctttggcat tgtcataacc tgtagatctc 1320

ttgtattcca gttaatatat caggcagaga aaccaaactg ttccatttgc gatcatatga 1380

atctgacaaa tattactgga tcagcaccag ttgtaaaaaa aaaaaaaaaa 1430

<210> 16
<211> 377
<212> PRT
<213> Nicotiana tabacum

<400> 16

Met Ser Val Thr Glu Leu Lys Glu Arg His Met Ala Ala Thr Gln Thr
1 5 10 15

Val Asn Asp Leu Arg Glu Lys Leu Lys Gln Lys Arg Leu Gln Leu Leu
20 25 30

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Asp Thr Asp Val Ser Gly Tyr Ala Arg Ser Gln Gly Lys Thr Pro Val
        35                  40                  45

Thr Phe Gly Pro Thr Asp Leu Val Cys Cys Arg Ile Leu Gln Gly His
    50                  55                  60

Thr Gly Lys Val Tyr Ser Leu Asp Trp Thr Pro Glu Lys Asn Arg Ile
65                  70                  75                  80

Val Ser Ala Ser Gln Asp Gly Arg Leu Ile Val Trp Asn Ala Leu Thr
                85                  90                  95

Ser Gln Lys Thr His Ala Ile Lys Leu Pro Cys Ala Trp Val Met Thr
            100                 105                 110

Cys Ala Phe Ser Pro Ser Gly Gln Ser Val Ala Cys Gly Gly Leu Asp
        115                 120                 125

Ser Val Cys Ser Ile Phe Asn Leu Asn Ser Pro Ile Asp Lys Asp Gly
    130                 135                 140

Asn His Pro Val Ser Arg Met Leu Ser Gly His Lys Gly Tyr Val Ser
145                 150                 155                 160

Ser Cys Gln Tyr Val Pro Asp Glu Asp Thr His Leu Ile Thr Ser Ser
                165                 170                 175

Gly Asp Gln Thr Cys Val Leu Trp Asp Ile Thr Thr Gly Leu Arg Thr
            180                 185                 190

Ser Val Phe Gly Gly Glu Phe Gln Ser Gly His Thr Ala Asp Val Gln
        195                 200                 205

Ser Val Ser Ile Ser Ser Ser Asn Pro Arg Leu Phe Val Ser Gly Ser
    210                 215                 220

Cys Asp Thr Thr Ala Arg Leu Trp Asp Thr Arg Val Ala Ser Arg Ala
225                 230                 235                 240

Gln Arg Thr Phe Tyr Gly His Glu Gly Asp Val Asn Thr Val Lys Phe
                245                 250                 255

Phe Pro Asp Gly Asn Arg Phe Gly Thr Gly Ser Glu Asp Gly Thr Cys
            260                 265                 270

Arg Leu Phe Asp Ile Arg Thr Glu His Gln Leu Gln Val Tyr Tyr Gln
```

275 280 285

Pro His Gly Asp Gly Asp Ile Pro His Val Thr Ser Met Ala Phe Ser
290 295 300

Ile Ser Gly Arg Leu Leu Phe Val Gly Tyr Ser Asn Gly Asp Cys Tyr
305 310 315 320

Val Trp Asp Thr Leu Leu Ala Lys Val Val Leu Asn Leu Gly Gly Val
325 330 335

Gln Asn Ser His Glu Gly Arg Ile Ser Cys Leu Gly Leu Ser Ala Asp
340 345 350

Gly Ser Ala Leu Cys Thr Gly Ser Trp Asp Thr Asn Leu Lys Ile Trp
355 360 365

Ala Phe Gly Gly His Arg Ser Val Ile
370 375

<210> 17
<211> 1526
<212> DNA
<213> Pisum sativum

<400> 17
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gcggagctca aagaacgtca catagcagcg acggaaacgg ttaacaatct cagagaacga 120

ttgaagcaga gacggctttc tttgcttgat acagatattg ctggatatgc taggtctcaa 180

ggtagagctc ctgttacttt tggtcccact gatattcttt gctgtagaac gctccaaggt 240

cataccggaa aggtgtattc attggattgg acttcagaaa agaataggat tgttagtgca 300

tcccaagatg gaagattaat agtgtggaat gctctaacaa gccagaaaac tcatgctata 360

aagcttcctt gtgcatgggt catgacgtgt gctttctcac caactggtca atctgttgct 420

tgtgggggcc ttgacagtgt ttgctctatt ttcaatctta attctcccac tgatagggat 480

gggaatctaa atgtttcacg gatgcttagt ggacataaag gttatgtttc atcttgtcag 540

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tgggatatta ctactggcct tagaacatct gtttttggag gcgagtttca gtctggacat 660

actgcagatg tacttagcat ttccattaat ggatccaact ccaaattgtt tgtatctggt 720

tcttgcgatg cgactgccag attgtgggac actcgtgtgg caagtcgagc agtgcggaca 780

tttcacggcc acgagggaga tgttaattct gtcaaattct ttcctgatgg aaatagattt 840

ggaactggct cagaggatgg aacttgcaga ttatttgaca ttaggaccgg acaccaactt 900

caagtatata atcagcaaca ccaagacaac gaaatggcac atgtgacgtc cattgcattt 960

tccatatccg gaagacttct tattgctggc tatacaaatg gtgattgcta tgtttgggat 1020

actttattgg ctaaggtggt cttgaatcta ggatctcttc aaaactctca tgagggcagg 1080

atcacctgtt tgggtatgtc tgctgatgga agtgctttat gtacaggaag ttgggacaca 1140

aatttaaaga tatgggcatt tggagggcat aggaaggtga tttgactcca ttgttagggc 1200

ttcaccttgt taatgatgct tgtgatattg actttgatcc agaattggaa ggcaaagttt 1260

atctccatgt ttataacctt tagcagtgga actagtgcag cctttattta tctccatgct 1320

cattggttcg tgtgtgtgat ttaggtatat atataccttt aaaccaaaac agaggactat 1380

ttaattttct gtctcctcaa tttaactatt tgaagtatgt gtttggttca cattggaaga 1440

actaaatgta ctagtatgtt tatagtggtt gaatcagatt tggatcaggt aaggggtgt 1500

ttggatcccc attgtaaaaa aaaaaa 1526

<210> 18
<211> 377
<212> PRT
<213> Pisum sativum

<400> 18

Met Ser Val Ala Glu Leu Lys Glu Arg His Ile Ala Ala Thr Glu Thr
1 5 10 15

Val Asn Asn Leu Arg Glu Arg Leu Lys Gln Arg Arg Leu Ser Leu Leu
20 25 30

Asp Thr Asp Ile Ala Gly Tyr Ala Arg Ser Gln Gly Arg Ala Pro Val
35 40 45

Thr Phe Gly Pro Thr Asp Ile Leu Cys Cys Arg Thr Leu Gln Gly His
50 55 60

Thr Gly Lys Val Tyr Ser Leu Asp Trp Thr Ser Glu Lys Asn Arg Ile
65 70 75 80

Val Ser Ala Ser Gln Asp Gly Arg Leu Ile Val Trp Asn Ala Leu Thr
85 90 95

Ser Gln Lys Thr His Ala Ile Lys Leu Pro Cys Ala Trp Val Met Thr
100 105 110

Cys Ala Phe Ser Pro Thr Gly Gln Ser Val Ala Cys Gly Gly Leu Asp

```
        115                 120                 125

Ser Val Cys Ser Ile Phe Asn Leu Asn Ser Pro Thr Asp Arg Asp Gly
    130                 135                 140

Asn Leu Asn Val Ser Arg Met Leu Ser Gly His Lys Gly Tyr Val Ser
145                 150                 155                 160

Ser Cys Gln Tyr Val Pro Gly Glu Asp Thr His Leu Ile Thr Gly Ser
                165                 170                 175

Gly Asp Gln Thr Cys Val Leu Trp Asp Ile Thr Thr Gly Leu Arg Thr
            180                 185                 190

Ser Val Phe Gly Gly Glu Phe Gln Ser Gly His Thr Ala Asp Val Leu
        195                 200                 205

Ser Ile Ser Ile Asn Gly Ser Asn Ser Lys Leu Phe Val Ser Gly Ser
    210                 215                 220

Cys Asp Ala Thr Ala Arg Leu Trp Asp Thr Arg Val Ala Ser Arg Ala
225                 230                 235                 240

Val Arg Thr Phe His Gly His Glu Gly Asp Val Asn Ser Val Lys Phe
                245                 250                 255

Phe Pro Asp Gly Asn Arg Phe Gly Thr Gly Ser Glu Asp Gly Thr Cys
            260                 265                 270

Arg Leu Phe Asp Ile Arg Thr Gly His Gln Leu Gln Val Tyr Asn Gln
        275                 280                 285

Gln His Gln Asp Asn Glu Met Ala His Val Thr Ser Ile Ala Phe Ser
    290                 295                 300

Ile Ser Gly Arg Leu Leu Ile Ala Gly Tyr Thr Asn Gly Asp Cys Tyr
305                 310                 315                 320

Val Trp Asp Thr Leu Leu Ala Lys Val Val Leu Asn Leu Gly Ser Leu
                325                 330                 335

Gln Asn Ser His Glu Gly Arg Ile Thr Cys Leu Gly Met Ser Ala Asp
            340                 345                 350

Gly Ser Ala Leu Cys Thr Gly Ser Trp Asp Thr Asn Leu Lys Ile Trp
        355                 360                 365
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Ala Phe Gly Gly His Arg Lys Val Ile
370 375

<210> 19
<211> 1611
<212> DNA
<213> Pisum sativum

<400> 19
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caacaataat ggaaagtata gttgtagatt catatcatta ttaggtcaaa ttcattcact 120

tcaatttcca ttcacttgac aaaatgtccg ttgcggacgt caaagaacgt cacatagcag 180

cgacggaaac ggttaacaat ctcagagaac gattgagcag agaccggctt tctttgcttg 240

atacagatat tgctggatat gctaggtctc aaggtagagc tcctgttact tttggtccca 300

ctgatattct ttgctgtaga acgctccaag gtcataccgg aaaggtgtat tcattggatt 360

ggacttcaga aaagaatagg attgttagtg catcccaaga tggaagatta atagtgtgga 420

atgctctaac aagccagaaa actcatgcta taaagcttcc ttgtgcatgg gtcatgacgt 480

gtgctttctc accaactggt caatctgttg cttgtggggg ccttgacagt gtttgctcta 540

ttttcaatct taattctcca ctcgataggg atgggaatct aaatgtttca cggatgctta 600

gtggacataa aggttatgtt tcatcttgtc agtatgttcc aggtgaagac actcacttaa 660

tcactggttc tggagatcag acatgtgttt tatgggatat tactactggc cttagaacat 720

ctgtcttttt aggcgagttt cagtctggac atactgcaga tgtacttagc atttccatta 780

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ctgtcaaatt ctttcctgat ggaaatagat ttggaactgg ctcagaggat ggaacttgca 960

gattatttga cattaggacc ggacaccaac ttcaagtata taatcagcaa caccaagaca 1020

acgaaatggc acatgtgacg tccattgcat tttccatatc cggaagactt cttattgctg 1080

gctatacaaa tggtgattgc tatgtttggg atactttatt ggctaaggtg gtcttgaatc 1140

taggatctct tcaaaactct catgagggca ggatcacctg tttgggtatg tctgctgatg 1200

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ataggaaggt gatttgactc cattgttagg gcttcacctt gtaatgatgc ttgtgatatt 1320

gactttgatc cagaattgga aggcaaagtt tatctccatg tatacttagc agtgactagt 1380

gcagcttatt atctcatgct cattggttcg tgtgtgtgat ttaggtatat atataccttt 1440

aaaccaaaac agaggactta taattttgtg tctcctcaat ttaactattg aagtagtgtt 1500

tggttcacat tggaagaact aaatgtacta gtatgtttat agtggttgaa tcagatttgg 1560

ctcaggtaag ggggtgtttg gatccccatt gtaaaaaaaa aaaaaaaaaa a 1611

<210> 20
<211> 377
<212> PRT
<213> Pisum sativum

<400> 20

Met Ser Val Ala Asp Val Lys Glu Arg His Ile Ala Ala Thr Glu Thr
1 5 10 15

Val Asn Asn Leu Arg Glu Arg Leu Ser Arg Asp Arg Leu Ser Leu Leu
20 25 30

Asp Thr Asp Ile Ala Gly Tyr Ala Arg Ser Gln Gly Arg Ala Pro Val
35 40 45

Thr Phe Gly Pro Thr Asp Ile Leu Cys Cys Arg Thr Leu Gln Gly His
50 55 60

Thr Gly Lys Val Tyr Ser Leu Asp Trp Thr Ser Glu Lys Asn Arg Ile
65 70 75 80

Val Ser Ala Ser Gln Asp Gly Arg Leu Ile Val Trp Asn Ala Leu Thr
85 90 95

Ser Gln Lys Thr His Ala Ile Lys Leu Pro Cys Ala Trp Val Met Thr
100 105 110

Cys Ala Phe Ser Pro Thr Gly Gln Ser Val Ala Cys Gly Gly Leu Asp
115 120 125

Ser Val Cys Ser Ile Phe Asn Leu Asn Ser Pro Leu Asp Arg Asp Gly
130 135 140

Asn Leu Asn Val Ser Arg Met Leu Ser Gly His Lys Gly Tyr Val Ser
145 150 155 160

Ser Cys Gln Tyr Val Pro Gly Glu Asp Thr His Leu Ile Thr Gly Ser
165 170 175

Gly Asp Gln Thr Cys Val Leu Trp Asp Ile Thr Thr Gly Leu Arg Thr
180 185 190

Ser Val Phe Leu Gly Glu Phe Gln Ser Gly His Thr Ala Asp Val Leu
195 200 205

Ser Ile Ser Ile Asn Gly Ser Asn Ser Lys Leu Phe Val Ser Gly Ser
210 215 220

Cys Asp Ala Thr Ala Arg Leu Trp Asp Thr Arg Val Ala Ser Arg Ala
225 230 235 240

Val Arg Thr Phe His Gly His Glu Gly Asp Val Asn Ser Val Lys Phe
245 250 255

Phe Pro Asp Gly Asn Arg Phe Gly Thr Gly Ser Glu Asp Gly Thr Cys
260 265 270

Arg Leu Phe Asp Ile Arg Thr Gly His Gln Leu Gln Val Tyr Asn Gln
275 280 285

Gln His Gln Asp Asn Glu Met Ala His Val Thr Ser Ile Ala Phe Ser
290 295 300

Ile Ser Gly Arg Leu Leu Ile Ala Gly Tyr Thr Asn Gly Asp Cys Tyr
305 310 315 320

Val Trp Asp Thr Leu Leu Ala Lys Val Val Leu Asn Leu Gly Ser Leu
325 330 335

Gln Asn Ser His Glu Gly Arg Ile Thr Cys Leu Gly Met Ser Ala Asp
340 345 350

Gly Ser Ala Leu Cys Thr Gly Ser Trp Asp Thr Asn Leu Lys Ile Trp
355 360 365

Ala Phe Gly Gly His Arg Lys Val Ile
370 375

<210> 21
<211> 1470
<212> DNA
<213> Avena fatua

<400> 21
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tccaaggcgc aggggcggac ggcggtgagc ttcaaccaga cggatctggt gtgctgccgc 180

acgctgcagg gccacagcgg aaaggtatat tctctggatt ggactcctga aaagaactgg 240

atagtcagcg cctcacaaga tggaagacta attgtatgga atgctttaac gagtcaaaaa 300

acacatgcca taaagctaca ctgtccatgg gtgataacat gtgcttttgc acccaatggt 360

caatctgttg cctgtggtgg tctgaatagt gcatgctcta tatttaatct taattcccaa 420

gtggacagaa atggaaacat gccagtatca aaattactta ctggaccaaa gggctatgtt 480

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ccatcaggcc atacagctga cgtgttaagt ctgtccatca actcgttaaa cacaaatatg 660

tttgtctcgg gttcatgtga tacaactgta aggctatggg atctcagaat agcaagccgg 720

gcagtccgaa catatcatgg acatgaaggc gatattaaca gtgtcaagtt tttccctgat 780

ggtcataggt ttggtactgg ttcagatgat ggtacatgca gattatttga catgagaatc 840

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gactgttatg cgtgggacac gcttctcgcc gaggtagtgc tcaatttggg aactctccaa 1020

aactcccacg aaggtcgtat aagctgcctt gggttgtcat ctgatgggag tgcattgtgt 1080

acaggaagtt gggacaaaaa tttgaagatt tgggccttca gtggacaccg caaaatagtc 1140

tgaagccgcc cagcggtctt ctctccatgt tgtatgttcc tcctcctcgc ttgttgaaga 1200

atggtggcca actcaacagg ttcctgaaga tgaagttgtt ggttttgtag catagaaatc 1260

ttcctgtatc ataccttatg tccagtggaa aaatacagtt tatcggcgga gactgtgccg 1320

tgatgttctt gtacctggtc aagtcagcgt actgttaata gagagttatt actataaatc 1380

agcacccatg tgatcttttt ctgttctttc tatgtgcaat tatttcagct gtagaaaagc 1440

actaccttgt gatgtcttaa aaaaaaaaaa 1470

<210> 22
<211> 380
<212> PRT
<213> Avena fatua

<400> 22

Met Ala Ser Val Ala Glu Leu Lys Glu Arg His Ala Ala Ala Thr Ala
1 5 10 15

Ser Val Asn Ser Leu Arg Glu Arg Leu Arg Gln Arg Arg Gln Thr Leu
20 25 30

Leu Asp Thr Asp Val Glu Lys Tyr Ser Lys Ala Gln Gly Arg Thr Ala
35 40 45

```
Val Ser Phe Asn Gln Thr Asp Leu Val Cys Cys Arg Thr Leu Gln Gly
    50                  55                  60

His Ser Gly Lys Val Tyr Ser Leu Asp Trp Thr Pro Glu Lys Asn Trp
65                  70                  75                  80

Ile Val Ser Ala Ser Gln Asp Gly Arg Leu Ile Val Trp Asn Ala Leu
                85                  90                  95

Thr Ser Gln Lys Thr His Ala Ile Lys Leu His Cys Pro Trp Val Ile
            100                 105                 110

Thr Cys Ala Phe Ala Pro Asn Gly Gln Ser Val Ala Cys Gly Gly Leu
        115                 120                 125

Asn Ser Ala Cys Ser Ile Phe Asn Leu Asn Ser Gln Val Asp Arg Asn
    130                 135                 140

Gly Asn Met Pro Val Ser Lys Leu Leu Thr Gly Pro Lys Gly Tyr Val
145                 150                 155                 160

Leu Ser Cys Gln Tyr Val Pro Asp Gln Glu Thr Arg Met Ile Thr Gly
                165                 170                 175

Ser Gly Asp Pro Thr Cys Val Leu Trp Asp Val Thr Thr Gly Gln Arg
            180                 185                 190

Ile Ser Ile Phe Gly Gly Glu Phe Pro Ser Gly His Thr Ala Asp Val
        195                 200                 205

Leu Ser Leu Ser Ile Asn Ser Leu Asn Thr Asn Met Phe Val Ser Gly
    210                 215                 220

Ser Cys Asp Thr Thr Val Arg Leu Trp Asp Leu Arg Ile Ala Ser Arg
225                 230                 235                 240

Ala Val Arg Thr Tyr His Gly His Glu Gly Asp Ile Asn Ser Val Lys
                245                 250                 255

Phe Phe Pro Asp Gly His Arg Phe Gly Thr Gly Ser Asp Asp Gly Thr
            260                 265                 270

Cys Arg Leu Phe Asp Met Arg Ile Arg His Gln Leu Gln Val Tyr Ser
        275                 280                 285
```

```
Arg Glu Pro Asp Arg Asn Asp Asn Glu Leu Pro Ser Val Thr Ser Ile
    290                 295                 300

Ala Phe Ser Ile Ser Gly Arg Leu Leu Phe Ala Gly Tyr Ser Asn Gly
305                 310                 315                 320

Asp Cys Tyr Ala Trp Asp Thr Leu Leu Ala Glu Val Val Leu Asn Leu
                325                 330                 335

Gly Thr Leu Gln Asn Ser His Glu Gly Arg Ile Ser Cys Leu Gly Leu
            340                 345                 350

Ser Ser Asp Gly Ser Ala Leu Cys Thr Gly Ser Trp Asp Lys Asn Leu
        355                 360                 365

Lys Ile Trp Ala Phe Ser Gly His Arg Lys Ile Val
    370                 375                 380
```

<210> 23
<211> 1664
<212> DNA
<213> Oryza sativa

<400> 23

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agtagatccc ccctccctca accagcgcga ggtcgcgggg ggcgtgcggg cggcggcggc    180

atggcgtccg tggcggagct caaggagaag cacgcggcgg ccacggcgtc ggtgaactcc    240

ctgcgggagc ggctccgtca gaggcggcag atgctgctcg acaccgacgt ggagaggtac    300

tcgaggacgc aggggcggac gccggtgagc ttcaacccga cggatctggt gtgctgccgc    360

acgcttcaag gccacagcgg aaaggtatat tctctggatt ggacccctga aaagaattgg    420

atagtcagtg cctcacaaga tggaaggcta attgtatgga atgcattaac aagtcaaaaa    480

acacatgcca taaagttaca ttgcccatgg gtgatgacat gtgcatttgc acccaatggc    540

caatctgttg cctgtggtgg tcttgacagc gcatgctcta tcttcaatct taactcacaa    600

gcagacagag atgggaatat accagtatca agaatactta ccggacacaa aggctatgtt    660

tcatcctgtc agtatgtccc agatcaggaa acccgcctaa ttactagctc tggtgatcaa    720

acatgtgtcc tgtgggatgt tactactggc caaaggatat caatatttgg cggtgaattc    780

ccatcagggc atacggcaga tgttttgagc ttgtccataa actcatcaaa ttcgaatatg    840

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gggcaccaac ttcaagtata cagtcgggaa cctgatagaa atgataatga actcccaact 1080

gttacatcta ttgcattttc gatatcagga aggcttcttt ttgctggata ctccaatggt 1140

gactgttatg tgtgggacac acttctcgct gaggtggtac ttaatttggg aaacctccaa 1200

aactctcatg aggggcgtat aagctgcctt ggtctttctt ctgatgggag tgcattgtgt 1260

acaggaagtt gggacaagaa tttgaagatt tgggccttca gcggacaccg gaaaatagtt 1320

tgaaggacag ttttcttcct gtgttgttgt aagttccttg tgttaagaat tacgaccaac 1380

tcgatgggct atggaaatca gtttgttggt cttgtagcat agaatcaggc aatcagctgt 1440

atcatatcct aatgtccagt ggaaaaatgc aatctgttgt cttggcaaga cgtgtgctct 1500

gactcaccgt gttaagttga tgtagtgttt atattaccag aaagcatcat ccattcggat 1560

cggtctcttc ttgttgtata acttcttttt gtagtagaaa gctaccaact tttgcatttg 1620

tatttcacaa ctgattatga atttgtccct ttccaagtca gccc 1664

<210> 24
<211> 380
<212> PRT
<213> Oryza sativa

<400> 24

Met Ala Ser Val Ala Glu Leu Lys Glu Lys His Ala Ala Ala Thr Ala
1 5 10 15

Ser Val Asn Ser Leu Arg Glu Arg Leu Arg Gln Arg Arg Gln Met Leu
20 25 30

Leu Asp Thr Asp Val Glu Arg Tyr Ser Arg Thr Gln Gly Arg Thr Pro
35 40 45

Val Ser Phe Asn Pro Thr Asp Leu Val Cys Cys Arg Thr Leu Gln Gly
50 55 60

His Ser Gly Lys Val Tyr Ser Leu Asp Trp Thr Pro Glu Lys Asn Trp
65 70 75 80

Ile Val Ser Ala Ser Gln Asp Gly Arg Leu Ile Val Trp Asn Ala Leu
85 90 95

Thr Ser Gln Lys Thr His Ala Ile Lys Leu His Cys Pro Trp Val Met
100 105 110

```
Thr Cys Ala Phe Ala Pro Asn Gly Gln Ser Val Ala Cys Gly Gly Leu
        115                 120                 125

Asp Ser Ala Cys Ser Ile Phe Asn Leu Asn Ser Gln Ala Asp Arg Asp
    130                 135                 140

Gly Asn Ile Pro Val Ser Arg Ile Leu Thr Gly His Lys Gly Tyr Val
145                 150                 155                 160

Ser Ser Cys Gln Tyr Val Pro Asp Gln Glu Thr Arg Leu Ile Thr Ser
                165                 170                 175

Ser Gly Asp Gln Thr Cys Val Leu Trp Asp Val Thr Thr Gly Gln Arg
            180                 185                 190

Ile Ser Ile Phe Gly Gly Glu Phe Pro Ser Gly His Thr Ala Asp Val
        195                 200                 205

Leu Ser Leu Ser Ile Asn Ser Ser Asn Ser Asn Met Phe Val Ser Gly
    210                 215                 220

Ser Cys Asp Ala Thr Val Arg Leu Trp Asp Ile Arg Ile Ala Ser Arg
225                 230                 235                 240

Ala Val Arg Thr Tyr His Gly His Glu Gly Asp Ile Asn Ser Val Lys
                245                 250                 255

Phe Phe Pro Asp Gly Gln Arg Phe Gly Thr Gly Ser Asp Asp Gly Thr
            260                 265                 270

Cys Arg Leu Phe Asp Val Arg Thr Gly His Gln Leu Gln Val Tyr Ser
        275                 280                 285

Arg Glu Pro Asp Arg Asn Asp Asn Glu Leu Pro Thr Val Thr Ser Ile
    290                 295                 300

Ala Phe Ser Ile Ser Gly Arg Leu Leu Phe Ala Gly Tyr Ser Asn Gly
305                 310                 315                 320

Asp Cys Tyr Val Trp Asp Thr Leu Leu Ala Glu Val Val Leu Asn Leu
                325                 330                 335

Gly Asn Leu Gln Asn Ser His Glu Gly Arg Ile Ser Cys Leu Gly Leu
            340                 345                 350
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Ser Ser Asp Gly Ser Ala Leu Cys Thr Gly Ser Trp Asp Lys Asn Leu
355 360 365

Lys Ile Trp Ala Phe Ser Gly His Arg Lys Ile Val
370 375 380

<210> 25
<211> 1671
<212> DNA
<213> Zea mays

<400> 25
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tcctcgtaga ccccgacccg cgtgcactca atccctaggc ggcggcctcc ggcgcgaggc 180

tagcgggcgg cacccatggc gtccgtggcg gagctcaagg agaagcacgc cgcagctacg 240

gcgtcggtga actccctgcg cgagcgcctc cgccagcgcc gggagacgct cctcgacacc 300

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aatctcaatt ctcaagcaga cagagatggg aacatgccag tatcaagaat tcttactgga 660

cacaagggct atgtctcatc atgtcaatat gtcccagatc aggaaacacg tcttattact 720

agttcaggtg atcaaacatg tgttctttgg gatgttacta ctggacagag gatatcaata 780

tttggtggtg aattcccatc agggcataca gctgatgttc aaagtgtgtc catcaactca 840

tcaaatacaa atatgtttgt ctctggctca tgtgatacaa ctgtgaggct gtgggatatc 900

agaattgcaa gtcgagctgt tcgaacctac catggacatg aggatgatgt taacagtgtg 960

aagtttttcc ctgatggcca taggtttggt actggctcag atgatggcac atgtagatta 1020

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ttgggaaacc tgcaaaactc ccatgatggc cgtataagtt gcctcgggat gtcatctgat 1260

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cttaacaacg gacagtggtg attggtgacc aactcgactt gttcctggga atccctttgt 1440

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cggcgctaca tcttgttgag ttggtaactg tttatactgt tattacgaga atatcagtaa 1560

cgtgtgatct gccctttttct ttgtacaacc gtttgatctt ttcaggtttt gtgaagtagc 1620

atgtgtttcc ttaatcaatt tatcatatca gtttgtccat ttgctgaatt a 1671

<210> 26
<211> 380
<212> PRT
<213> Zea mays

<400> 26

Met Ala Ser Val Ala Glu Leu Lys Glu Lys His Ala Ala Ala Thr Ala
1 5 10 15

Ser Val Asn Ser Leu Arg Glu Arg Leu Arg Gln Arg Arg Glu Thr Leu
20 25 30

Leu Asp Thr Asp Val Ala Arg Tyr Ser Lys Ser Gln Gly Arg Val Pro
35 40 45

Val Ser Phe Asn Pro Thr Asp Leu Val Cys Cys Arg Thr Leu Gln Gly
50 55 60

His Ser Gly Lys Val Tyr Ser Leu Asp Trp Thr Pro Glu Lys Asn Trp
65 70 75 80

Ile Val Ser Ala Ser Gln Asp Gly Arg Leu Ile Val Trp Asn Ala Leu
85 90 95

Thr Ser Gln Lys Thr His Ala Ile Lys Leu His Cys Pro Trp Val Met
100 105 110

Ala Cys Ala Phe Ala Pro Asn Gly Gln Ser Val Ala Cys Gly Gly Leu
115 120 125

Asp Ser Ala Cys Ser Ile Phe Asn Leu Asn Ser Gln Ala Asp Arg Asp
130 135 140

Gly Asn Met Pro Val Ser Arg Ile Leu Thr Gly His Lys Gly Tyr Val
145 150 155 160

Ser Ser Cys Gln Tyr Val Pro Asp Gln Glu Thr Arg Leu Ile Thr Ser
165 170 175

Ser Gly Asp Gln Thr Cys Val Leu Trp Asp Val Thr Thr Gly Gln Arg
180 185 190

Ile Ser Ile Phe Gly Gly Glu Phe Pro Ser Gly His Thr Ala Asp Val
195 200 205

Gln Ser Val Ser Ile Asn Ser Ser Asn Thr Asn Met Phe Val Ser Gly
210 215 220

Ser Cys Asp Thr Thr Val Arg Leu Trp Asp Ile Arg Ile Ala Ser Arg
225 230 235 240

Ala Val Arg Thr Tyr His Gly His Glu Asp Asp Val Asn Ser Val Lys
245 250 255

Phe Phe Pro Asp Gly His Arg Phe Gly Thr Gly Ser Asp Asp Gly Thr
260 265 270

Cys Arg Leu Phe Asp Met Arg Thr Gly His Gln Leu Gln Val Tyr Ser
275 280 285

Arg Glu Pro Asp Arg Asn Ser Asn Glu Leu Pro Thr Val Thr Ser Ile
290 295 300

Ala Phe Ser Ile Ser Gly Arg Leu Leu Phe Ala Gly Tyr Ser Asn Gly
305 310 315 320

Asp Cys Tyr Val Trp Asp Thr Leu Leu Ala Glu Val Val Leu Asn Leu
325 330 335

Gly Asn Leu Gln Asn Ser His Asp Gly Arg Ile Ser Cys Leu Gly Met
340 345 350

Ser Ser Asp Gly Ser Ala Leu Cys Thr Gly Ser Trp Asp Lys Asn Leu
355 360 365

Lys Ile Trp Ala Phe Ser Gly His Arg Lys Ile Val
370 375 380

<210> 27
<211> 1453
<212> DNA
<213> Solanum tuberosum

<400> 27
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cagaaacttc ttctacttgg tgccggagat tcggggaagt ctacgatttt taaacagata 180

aaactcttgt tccaaactgg ctttgatgaa gcagagctaa agaactacat ccctgtgatt 240

catgccaatg cttatcagac aataaaaata ttacatgatg gatcaaagga attagctcaa 300

aatgaattag aggcctcaaa gtatcttcta tcagctgaaa ataaggagat cggcgagaag 360

ctttcagaaa ttggaggcag gttggattat cctcgcctga ctaaggatct ggtgcaggat 420

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caggttccag attgtgccca ttatttcatg gaaaacttgg agagattttc tgatatacat 540

tatattccaa caaaggagga tgttcttttt gcccggattc gaacgacagg tgtcgttgaa 600

atacagttca gtccagttgg agagaacaaa aaaagtggag aagtgtatag gctttttgat 660

gttggaggtc agagaaatga gagaagaaag tggattcatc tatttgaagg tgtaacagca 720

gttatatttt gtgccgctat tagtgagtat gatcaaactc tatttgagga tgaaagaaag 780

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gttcccctca acacttgtga gtggtttaaa gattaccagt cagtttcaac aggaaaacaa 960

gagattgagc atgcttatga gtttgtaaag aaaaaatttg aggagtcata tttccaatgc 1020

actgcaccag atcgtgtgga ccgtgtgttt aagatctata gaaccacagc ccttgatcag 1080

aagcttgtaa agaagacgtt caaactggta gacgagaccc tgagaaggag aaacctcttc 1140

gaagcaggtt tattatgaaa ttctttaaat tttcaaaaaa aaaaaaaaca gaaatgttca 1200

tacctttgaa agatgcatac aagttttgaa cagtgaggtt caaatacaga aaaaacaggc 1260

tatggtgggg ggtatcatat cagattcaac aatttaagtt ttgtccatgt taggtctcta 1320

agcacatatt tctttctata tcccggtatt gttatgttct acttacaaaa cagattggat 1380

caaaacaaaa attgatattc tattgatgtt cattttgttg aatgttgtaa cattctcaca 1440

gcgcgaagtt gta 1453

<210> 28
<211> 385
<212> PRT
<213> Solanum tuberosum

<400> 28

Met Gly Ser Leu Cys Ser Ser Arg Asn Lys His Tyr Ser Gln Ala Asp
1 5 10 15

Asp Glu Glu Asn Thr Gln Thr Ala Glu Ile Glu Arg Arg Ile Glu Gln
20 25 30

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Glu Thr Lys Ala Asp Lys His Ile Gln Lys Leu Leu Leu Leu Gly Ala
        35                  40                  45

Gly Asp Ser Gly Lys Ser Thr Ile Phe Lys Gln Ile Lys Leu Leu Phe
    50                  55                  60

Gln Thr Gly Phe Asp Glu Ala Glu Leu Lys Asn Tyr Ile Pro Val Ile
65                  70                  75                  80

His Ala Asn Ala Tyr Gln Thr Ile Lys Ile Leu His Asp Gly Ser Lys
                85                  90                  95

Glu Leu Ala Gln Asn Glu Leu Glu Ala Ser Lys Tyr Leu Leu Ser Ala
            100                 105                 110

Glu Asn Lys Glu Ile Gly Glu Lys Leu Ser Glu Ile Gly Gly Arg Leu
        115                 120                 125

Asp Tyr Pro Arg Leu Thr Lys Asp Leu Val Gln Asp Ile Glu Ala Leu
    130                 135                 140

Trp Lys Asp Pro Ala Ile Gln Glu Thr Leu Leu Arg Gly Asn Glu Leu
145                 150                 155                 160

Gln Val Pro Asp Cys Ala His Tyr Phe Met Glu Asn Leu Glu Arg Phe
                165                 170                 175

Ser Asp Ile His Tyr Ile Pro Thr Lys Glu Asp Val Leu Phe Ala Arg
            180                 185                 190

Ile Arg Thr Thr Gly Val Val Glu Ile Gln Phe Ser Pro Val Gly Glu
        195                 200                 205

Asn Lys Lys Ser Gly Glu Val Tyr Arg Leu Phe Asp Val Gly Gly Gln
    210                 215                 220

Arg Asn Glu Arg Arg Lys Trp Ile His Leu Phe Glu Gly Val Thr Ala
225                 230                 235                 240

Val Ile Phe Cys Ala Ala Ile Ser Glu Tyr Asp Gln Thr Leu Phe Glu
                245                 250                 255

Asp Glu Arg Lys Asn Arg Met Met Glu Thr Lys Glu Leu Phe Glu Trp
            260                 265                 270
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Val Leu Lys Gln Pro Cys Phe Glu Lys Thr Ser Cys Met Leu Phe Leu
275 280 285

Asn Lys Phe Asp Ile Phe Glu Gln Lys Val Leu Lys Val Pro Leu Asn
290 295 300

Thr Cys Glu Trp Phe Lys Asp Tyr Gln Ser Val Ser Thr Gly Lys Gln
305 310 315 320

Glu Ile Glu His Ala Tyr Glu Phe Val Lys Lys Lys Phe Glu Glu Ser
325 330 335

Tyr Phe Gln Cys Thr Ala Pro Asp Arg Val Asp Arg Val Phe Lys Ile
340 345 350

Tyr Arg Thr Thr Ala Leu Asp Gln Lys Leu Val Lys Lys Thr Phe Lys
355 360 365

Leu Val Asp Glu Thr Leu Arg Arg Arg Asn Leu Phe Glu Ala Gly Leu
370 375 380

Leu
385

<210> 29
<211> 1276
<212> DNA
<213> Solanum tuberosum

<400> 29
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acaaacacta cagtcaagcc gatgatgagg aaaatactca gactgcagag atagaaagac 180

ggattgaaca agaaacaaag gccgacaagc atattcagaa acttcttcta cttggtgccg 240

gagattcggg gaagtctacg atttttaaac agataaaact cttgttccaa actggctttg 300

atgaagcaga gctaaagaac tacatccctg tgattcatgc caatgtttat cagacaataa 360

aaatattaca tgatggatca aaggaattag ctcaaaatga attagaggcc tcaaagtatc 420

ttctatcagc tgaaaataag gagatcggtg agaagctttc agaaattgga ggcaggttgg 480

attatcctcg cctgactaag gatctggtgc aggatattga agctctttgg aaagatcctg 540

ctattcaaga aactctgtta cgtggtaatg agcttcaggt tccagattgt gcccattatt 600

tcatggaaaa cttggagaga ttttctgata tacattatat tccaacaaag gaggatgttc 660

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acaaaaaaag tggagaagtg tataggcttt ttgatgttgg aggtcagaga aatgagagaa    780

gaaagtggat tcatctattt gaaggtgtaa cagcagttat attttgtgcc gctattagtg    840

agtatgatca aactctattt gaggatgaaa gaaagaaccg aatgatggag accaaggaac    900

tctttgagtg ggtcttaaag caaccatgtt ttgagaaaac ttccttcatg ctgtttctca    960

acaaatttga tatatttgag cagaaggttc tgaaagtgcc cctcaacact tgtgagtggt   1020

ttaaggatta ccagtcagtt tcaacaggaa aacaagagat tgagcatgct tatgagtttg   1080

taaagaaaaa atttgaggag tcatatttcc aatgcactgc accagattgt gtggaccgtg   1140

tgtttaagat ctatagaacc acagcccttg atcagaagct tgtaaagaag acgttcaaac   1200

tggtagacga gaccctgaga aggagaaacc tattcgaagc aggtttatta tgaaattctt   1260

taaattttca aaaaaa                                                   1276
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<210> 30
<211> 392
<212> PRT
<213> Solanum tuberosum

<400> 30

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Met Leu Ser Val Val Leu Glu Asn Met Gly Ser Leu Cys Ser Arg Asn
1               5                  10                  15

Lys His Tyr Ser Gln Ala Asp Asp Glu Glu Asn Thr Gln Thr Ala Glu
            20                  25                  30

Ile Glu Arg Arg Ile Glu Gln Glu Thr Lys Ala Asp Lys His Ile Gln
        35                  40                  45

Lys Leu Leu Leu Leu Gly Ala Gly Asp Ser Gly Lys Ser Thr Ile Phe
    50                  55                  60

Lys Gln Ile Lys Leu Leu Phe Gln Thr Gly Phe Asp Glu Ala Glu Leu
65                  70                  75                  80

Lys Asn Tyr Ile Pro Val Ile His Ala Asn Val Tyr Gln Thr Ile Lys
                85                  90                  95

Ile Leu His Asp Gly Ser Lys Glu Leu Ala Gln Asn Glu Leu Glu Ala
            100                 105                 110

Ser Lys Tyr Leu Leu Ser Ala Glu Asn Lys Glu Ile Gly Glu Lys Leu
        115                 120                 125
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Ser Glu Ile Gly Gly Arg Leu Asp Tyr Pro Arg Leu Thr Lys Asp Leu
    130                 135                 140

Val Gln Asp Ile Glu Ala Leu Trp Lys Asp Pro Ala Ile Gln Glu Thr
145                 150                 155                 160

Leu Leu Arg Gly Asn Glu Leu Gln Val Pro Asp Cys Ala His Tyr Phe
                165                 170                 175

Met Glu Asn Leu Glu Arg Phe Ser Asp Ile His Tyr Ile Pro Thr Lys
            180                 185                 190

Glu Asp Val Leu Phe Ala Arg Ile Arg Thr Thr Gly Val Val Glu Ile
        195                 200                 205

Gln Phe Ser Pro Val Gly Glu Asn Lys Lys Ser Gly Glu Val Tyr Arg
    210                 215                 220

Leu Phe Asp Val Gly Gly Gln Arg Asn Glu Arg Arg Lys Trp Ile His
225                 230                 235                 240

Leu Phe Glu Gly Val Thr Ala Val Ile Phe Cys Ala Ala Ile Ser Glu
                245                 250                 255

Tyr Asp Gln Thr Leu Phe Glu Asp Glu Arg Lys Asn Arg Met Met Glu
            260                 265                 270

Thr Lys Glu Leu Phe Glu Trp Val Leu Lys Gln Pro Cys Phe Glu Lys
        275                 280                 285

Thr Ser Phe Met Leu Phe Leu Asn Lys Phe Asp Ile Phe Glu Gln Lys
    290                 295                 300

Val Leu Lys Val Pro Leu Asn Thr Cys Glu Trp Phe Lys Asp Tyr Gln
305                 310                 315                 320

Ser Val Ser Thr Gly Lys Gln Glu Ile Glu His Ala Tyr Glu Phe Val
                325                 330                 335

Lys Lys Lys Phe Glu Glu Ser Tyr Phe Gln Cys Thr Ala Pro Asp Cys
            340                 345                 350

Val Asp Arg Val Phe Lys Ile Tyr Arg Thr Thr Ala Leu Asp Gln Lys
        355                 360                 365
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Leu Val Lys Lys Thr Phe Lys Leu Val Asp Glu Thr Leu Arg Arg Arg
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Asn Leu Phe Glu Ala Gly Leu Leu
385 390

<210> 31
<211> 1558
<212> DNA
<213> Solanum tuberosum

<400> 31
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caagcatatt cagaaacttc ttctacttgg tgccggagat tcggggaagt ctacgatttt 180

taaacagata aaactcttgt tccaaactgg ctttgatgaa gcagagctaa agaactacat 240

ccctgtgatt catgccaatg tttatcagac aataaaaata ttacatgatg gatcaaagga 300

attagctcaa aatgaattag aggcctcaaa gtatcttcta tcagctgaaa ataaggagat 360

cggcgagaag ctttcagaaa ttggaggcag gttggattat cctcgcctga ctaaggatct 420

ggtgcaggat attgaagctc tttggaaaga tcctgctatt caagaaactc tgttacgtgg 480

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gctttttgat gttggaggtc agagaaatga gagaagaaag tggattcatc tatttgaagg 720

tgtaacagca gttatatttt gtgccgctat tagtgagtat gatcaaactc tatttgagga 780

tgaaagaaag aaccgaatga tggagaccaa ggaactcttt gagtgggtct taaagcaacc 840

atgttttgag aaaacttcct tcatgctgtt tctcaacaaa tttgatatat ttgagcagaa 900

ggttctgaaa gttcccctca acacttgtga gtggtttaaa gattaccagt cagtttcaac 960

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ccttgatcag aagcttgtaa agaagacgtt caaactggta gacgagaccc tgagaaggag 1140

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gaaatgttca tacctttgaa agatgcatac aagttttgaa cagtgaggtt caaatacaga 1260

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cagatggatc aaaacaaaaa ttgatattct attgatgttc attttgttga atgttgtaac 1440

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atttagttta tcgtttagct cttacccagc ttaagctatt aaaaaaaaaa aaaaaaaa 1558

<210> 32
<211> 384
<212> PRT
<213> Solanum tuberosum

<400> 32

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Glu Glu Asn Thr Gln Thr Ala Glu Ile Glu Arg Arg Ile Glu Gln Glu
20 25 30

Thr Lys Ala Asp Lys His Ile Gln Lys Leu Leu Leu Leu Gly Ala Gly
35 40 45

Asp Ser Gly Lys Ser Thr Ile Phe Lys Gln Ile Lys Leu Leu Phe Gln
50 55 60

Thr Gly Phe Asp Glu Ala Glu Leu Lys Asn Tyr Ile Pro Val Ile His
65 70 75 80

Ala Asn Val Tyr Gln Thr Ile Lys Ile Leu His Asp Gly Ser Lys Glu
85 90 95

Leu Ala Gln Asn Glu Leu Glu Ala Ser Lys Tyr Leu Leu Ser Ala Glu
100 105 110

Asn Lys Glu Ile Gly Glu Lys Leu Ser Glu Ile Gly Gly Arg Leu Asp
115 120 125

Tyr Pro Arg Leu Thr Lys Asp Leu Val Gln Asp Ile Glu Ala Leu Trp
130 135 140

Lys Asp Pro Ala Ile Gln Glu Thr Leu Leu Arg Gly Asn Glu Leu Gln
145 150 155 160

Val Pro Asp Cys Ala His Tyr Phe Met Glu Asn Leu Glu Arg Phe Ser
165 170 175

Asp Ile His Tyr Ile Pro Thr Lys Glu Asp Val Leu Phe Ala Arg Ile
180 185 190

Arg Thr Thr Gly Val Val Glu Ile Gln Phe Ser Pro Val Gly Glu Asn
195 200 205

Lys Lys Ser Gly Glu Val Tyr Arg Leu Phe Asp Val Gly Gly Gln Arg
210 215 220

Asn Glu Arg Arg Lys Trp Ile His Leu Phe Glu Gly Val Thr Ala Val
225 230 235 240

Ile Phe Cys Ala Ala Ile Ser Glu Tyr Asp Gln Thr Leu Phe Glu Asp
245 250 255

Glu Arg Lys Asn Arg Met Met Glu Thr Lys Glu Leu Phe Glu Trp Val
260 265 270

Leu Lys Gln Pro Cys Phe Glu Lys Thr Ser Phe Met Leu Phe Leu Asn
275 280 285

Lys Phe Asp Ile Phe Glu Gln Lys Val Leu Lys Val Pro Leu Asn Thr
290 295 300

Cys Glu Trp Phe Lys Asp Tyr Gln Ser Val Ser Thr Gly Lys Gln Glu
305 310 315 320

Ile Glu His Ala Tyr Glu Phe Val Lys Lys Lys Phe Glu Glu Ser Tyr
325 330 335

Phe Gln Cys Thr Ala Pro Asp Arg Val Asp Arg Val Phe Lys Ile Tyr
340 345 350

Arg Thr Thr Ala Leu Asp Gln Lys Leu Val Lys Lys Thr Phe Lys Leu
355 360 365

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370 375 380

<210> 33
<211> 1461
<212> DNA
<213> Oryza sativa

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ttaagtgagg ctgaaacaac caaaaatgca aaatctgcag acattgacag gcgaattttg 180

caagagacaa aagcagagca acacatccac aagctcttac ttcttggtgc gggagaatca 240

gggaagtcta cgatatttaa acagattaag ctccttttcc aaactggctt tgatgaggca 300

gaacttagga gctacacatc agttatccat gcaaacgtct atcagacaat taaaatacta 360

tatgaaggag caaaagaact ctcacaagtg gaatcagatt cctcaaagta tgttatatcc 420

ccagataacc aggaaattgg agaaaaacta tcagatattg atggcaggtt ggattatcca 480

ctgctgaaca aagaacttgt actcgatgta aaaaggttat ggcaagaccc agccattcag 540

gaaacttact tacgtggaag tattctgcaa cttcctgatt gtgcacaata cttcatggaa 600

aatttggatc gattagctga agcaggttat gtgccaacaa aggaggatgt gctttatgca 660

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gatatattcg agaagaaaat acaaaaggtt cctttaagtg tgtgcgagtg gtttaaagac 1020

taccagccta ttgcacctgg gaaacaggag gttgaacatg catatgagtt tgtcaagaag 1080

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gagagcatga gacgctccag ggaaggaact tgattcagag ctaagactag gttgtaagtc 1260

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<210> 34
<211> 380
<212> PRT
<213> Oryza sativa

<400> 34

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Thr Lys Ala Glu Gln His Ile His Lys Leu Leu Leu Leu Gly Ala Gly
35 40 45

Glu Ser Gly Lys Ser Thr Ile Phe Lys Gln Ile Lys Leu Leu Phe Gln
50 55 60

Thr Gly Phe Asp Glu Ala Glu Leu Arg Ser Tyr Thr Ser Val Ile His
65 70 75 80

Ala Asn Val Tyr Gln Thr Ile Lys Ile Leu Tyr Glu Gly Ala Lys Glu
85 90 95

Leu Ser Gln Val Glu Ser Asp Ser Ser Lys Tyr Val Ile Ser Pro Asp
100 105 110

Asn Gln Glu Ile Gly Glu Lys Leu Ser Asp Ile Asp Gly Arg Leu Asp
115 120 125

Tyr Pro Leu Leu Asn Lys Glu Leu Val Leu Asp Val Lys Arg Leu Trp
130 135 140

Gln Asp Pro Ala Ile Gln Glu Thr Tyr Leu Arg Gly Ser Ile Leu Gln
145 150 155 160

Leu Pro Asp Cys Ala Gln Tyr Phe Met Glu Asn Leu Asp Arg Leu Ala
165 170 175

Glu Ala Gly Tyr Val Pro Thr Lys Glu Asp Val Leu Tyr Ala Arg Val
180 185 190

Arg Thr Asn Gly Val Val Gln Ile Gln Phe Ser Pro Val Gly Glu Asn
195 200 205

Lys Arg Gly Gly Glu Val Tyr Arg Leu Tyr Asp Val Gly Gly Gln Arg
210 215 220

Asn Glu Arg Arg Lys Trp Ile His Leu Phe Glu Gly Val Asn Ala Val
225 230 235 240

Ile Phe Cys Ala Ala Ile Ser Glu Tyr Asp Gln Met Leu Phe Glu Asp
245 250 255

Glu Thr Lys Asn Arg Met Met Glu Thr Lys Glu Leu Phe Asp Trp Val
260 265 270

Leu Lys Gln Arg Cys Phe Glu Lys Thr Ser Phe Ile Leu Phe Leu Asn
275 280 285

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Lys Phe Asp Ile Phe Glu Lys Lys Ile Gln Lys Val Pro Leu Ser Val
    290                 295                 300

Cys Glu Trp Phe Lys Asp Tyr Gln Pro Ile Ala Pro Gly Lys Gln Glu
305                 310                 315                 320

Val Glu His Ala Tyr Glu Phe Val Lys Lys Lys Phe Glu Glu Leu Tyr
                325                 330                 335

Phe Gln Ser Ser Lys Pro Asp Arg Val Asp Arg Val Phe Lys Ile Tyr
            340                 345                 350

Arg Thr Thr Ala Leu Asp Gln Lys Leu Val Lys Lys Thr Phe Lys Leu
        355                 360                 365

Ile Asp Glu Ser Met Arg Arg Ser Arg Glu Gly Thr
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<210> 35
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<212> DNA
<213> Oryza sativa

<400> 35

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aggttggatt atccactgct gaacaaagaa cttgtactcg atgtaaaaag gttatggcaa    540

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<210> 36
<211> 380
<212> PRT
<213> Oryza sativa

<400> 36

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Thr Lys Asn Ala Lys Ser Ala Asp Ile Asp Arg Arg Ile Leu Gln Glu
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Thr Lys Ala Glu Gln His Ile His Lys Leu Leu Leu Leu Gly Ala Gly
35 40 45

Glu Ser Gly Lys Ser Thr Ile Phe Lys Gln Ile Lys Leu Leu Phe Gln
50 55 60

Thr Gly Phe Asp Glu Ala Glu Leu Arg Ser Tyr Thr Ser Val Ile His
65 70 75 80

Ala Asn Val Tyr Gln Thr Ile Lys Ile Leu Tyr Glu Gly Ala Lys Glu
85 90 95

Leu Ser Gln Val Glu Ser Asp Ser Ser Lys Tyr Val Ile Ser Pro Asp
100 105 110

Asn Gln Glu Ile Gly Glu Lys Leu Ser Asp Ile Asp Gly Arg Leu Asp
115 120 125

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Tyr Pro Leu Leu Asn Lys Glu Leu Val Leu Asp Val Lys Arg Leu Trp
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Gln Asp Pro Ala Ile Gln Glu Thr Tyr Leu Arg Gly Ser Ile Leu Gln
145                 150                 155                 160

Leu Pro Asp Cys Ala Gln Tyr Phe Met Glu Asn Leu Val Arg Leu Ala
                165                 170                 175

Glu Ala Gly Tyr Val Pro Thr Lys Glu Asp Val Leu Tyr Ala Arg Val
            180                 185                 190

Arg Thr Asn Gly Val Val Gln Ile Gln Phe Ser Pro Val Gly Glu Asn
        195                 200                 205

Lys Arg Gly Gly Glu Val Tyr Arg Leu Tyr Asp Val Gly Gly Gln Arg
    210                 215                 220

Asn Glu Arg Arg Lys Trp Ile His Leu Phe Glu Gly Val Asn Ala Val
225                 230                 235                 240

Ile Phe Cys Ala Ala Ile Ser Glu Tyr Asp Gln Met Leu Phe Glu Asp
                245                 250                 255

Glu Thr Lys Asn Arg Met Met Glu Thr Lys Glu Leu Phe Asp Trp Val
            260                 265                 270

Leu Lys Gln Arg Cys Phe Glu Lys Thr Ser Phe Ile Leu Phe Leu Asn
        275                 280                 285

Lys Phe Asp Ile Cys Glu Lys Lys Ile Gln Lys Val Pro Leu Ser Val
    290                 295                 300

Cys Glu Trp Phe Lys Asp Tyr Gln Pro Ile Ala Pro Gly Lys Gln Glu
305                 310                 315                 320

Val Glu His Ala Tyr Glu Phe Val Lys Lys Lys Phe Glu Glu Leu Tyr
                325                 330                 335

Phe Gln Ser Ser Lys Pro Asp Arg Val Asp Arg Val Phe Lys Ile Tyr
            340                 345                 350

Arg Thr Thr Ala Leu Asp Gln Lys Leu Val Lys Lys Thr Phe Lys Leu
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<210> 37
<211> 7360
<212> DNA
<213> Nicotiana tomentosiformis

<400> 37
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Asp Ser Gly Lys Ser Thr Ile Phe Lys Gln Ile Lys Leu Leu Phe Gln
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Thr Gly Phe Asp Glu Ala Glu Leu Lys Asn Tyr Ile Pro Val Ile His
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Ala Asn Val Tyr Gln Thr Ile Lys Val Leu His Asp Gly Ser Lys Glu
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Asp Ile Asn Tyr Val Pro Ser Lys Glu Asp Val Leu Phe Ala Arg Ile
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Arg Thr Thr Gly Val Val Glu Ile Gln Phe Ser Pro Val Gly Glu Asn
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Lys Lys Ser Gly Glu Val Tyr Arg Leu Phe Asp Val Gly Gly Gln Arg
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Asn Glu Arg Arg Lys Trp Ile His Leu Phe Glu Gly Val Thr Ala Val
225                 230                 235                 240

Ile Phe Cys Ala Ala Ile Ser Glu Tyr Asp Gln Thr Leu Phe Glu Asp
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Glu Arg Lys Asn Arg Met Met Glu Thr Lys Glu Leu Phe Glu Trp Val
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Leu Lys Gln Pro Cys Phe Glu Lys Thr Ser Phe Met Leu Phe Leu Asn
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Lys Phe Asp Ile Phe Glu Gln Lys Ala Leu Lys Val Pro Leu Asn Val
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Cys Glu Trp Phe Lys Asp Tyr Gln Ser Val Ser Thr Gly Lys Gln Glu
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Ile Glu His Ala Tyr Glu Phe Val Lys Lys Lys Leu Glu Glu Ser Tyr
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Asp Ser Gly Lys Ser Thr Ile Phe Lys Gln Ile Lys Leu Leu Phe Gln
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Thr Gly Phe Asp Glu Ala Glu Leu Lys Asn Tyr Ile Pro Val Ile His
65 70 75 80

Ala Asn Val Tyr Gln Thr Ile Lys Val Leu His Asp Gly Ser Lys Glu
85 90 95

Leu Ala Gln Ser Glu Leu Glu Ala Ser Lys Tyr Leu Leu Ser Ala Glu
100 105 110

Asn Lys Asp Ile Gly Glu Lys Leu Ser Glu Ile Gly Gly Arg Leu Asp
115 120 125

Tyr Pro His Leu Thr Lys Asp Leu Val Gln Asp Ile Glu Ala Leu Trp
130 135 140

Lys Asp Pro Ala Ile Gln Glu Thr Ile Leu Arg Gly Asn Glu Leu Gln
145 150 155 160

Val Pro Asp Cys Ala His Tyr Phe Met Glu Asn Leu Gln Arg Phe Ser
165 170 175

Asp Ile Asn Tyr Val Pro Ser Lys Glu Asp Val Leu Phe Ala Arg Ile
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Arg Thr Thr Gly Val Val Glu Ile Gln Phe Ser Pro Val Gly Glu Asn
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Lys Lys Ser Gly Glu Val Tyr Arg Leu Phe Asp Val Gly Gly Gln Arg
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Asn Glu Arg Arg Lys Trp Ile His Leu Phe Glu Gly Val Thr Ala Val
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Ile Phe Cys Ala Ala Ile Ser Gly Tyr Asp Gln Thr Leu Phe Glu Asp
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Glu Arg Lys Asn Arg Met Met Glu Thr Lys Glu Leu Phe Glu Trp Val
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Leu Lys Gln Pro Cys Phe Glu Lys Thr Ser Phe Met Leu Phe Leu Asn
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Cys Glu Trp Phe Lys Asp Tyr Gln Ser Val Ser Thr Gly Lys Gln Glu
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Phe Gln Cys Thr Ala Pro Asp Arg Val Asp Arg Val Phe Lys Ile Tyr
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Arg Thr Thr Ala Leu Asp Gln Lys Leu Val Lys Lys Thr Phe Lys Leu
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Ile Glu Arg Arg Ile Glu Gln Glu Thr Lys Ala Asp Lys His Ile Gln
35 40 45

Lys Leu Leu Leu Leu Gly Ala Gly Asp Ser Gly Lys Ser Thr Ile Phe
50 55 60

Lys Gln Ile Lys Leu Leu Phe Gln Thr Gly Phe Asp Glu Ala Glu Leu
65 70 75 80

Lys Asn Tyr Ile Pro Val Ile His Ala Asn Val Tyr Gln Thr Ile Lys
85 90 95

Val Leu His Asp Gly Ser Lys Glu Leu Ala Gln Ser Glu Leu Glu Ala
100 105 110

Ser Lys Tyr Leu Leu Ser Ala Glu Asn Lys Asp Ile Gly Glu Lys Leu
115 120 125

Ser Glu Ile Gly Gly Arg Leu Asp Tyr Pro His Leu Thr Lys Asp Leu
130 135 140

Val Gln Asp Ile Glu Ala Leu Trp Arg Asp Pro Ala Ile Gln Glu Thr
145 150 155 160

Ile Leu Arg Gly Asn Glu Leu Gln Val Pro Asp Cys Ala His Tyr Phe
165 170 175

Met Glu Asn Leu Gln Arg Phe Ser Asp Val Asn Tyr Val Pro Ser Lys
180 185 190

Glu Asp Val Leu Phe Ala Arg Ile Arg Thr Thr Gly Val Val Glu Ile
195 200 205

Gln Phe Ser Pro Val Gly Glu Asn Lys Lys Ser Gly Glu Val Tyr Arg
210 215 220

Leu Phe Asp Val Gly Gly Gln Arg Asn Glu Arg Arg Lys Trp Ile His
225 230 235 240

Leu Phe Glu Asp Glu Arg Lys Asn Arg Met Met Glu Thr Lys Glu Leu
245 250 255

Phe Glu Trp Val Leu Lys Gln Pro Cys Phe Glu Lys Thr Ser Phe Met
260 265 270

Leu Phe Leu Asn Lys Phe Asp Ile Phe Glu Gln Lys Ala Leu Lys Val
275 280 285

Pro Leu Asn Val Cys Glu Trp Phe Lys Asp Tyr Gln Pro Val Ser Thr

290 295 300

Gly Lys Gln Glu Ile Glu His Ala Tyr Glu Phe Val Lys Lys Lys Phe
305 310 315 320

Glu Glu Ser Tyr Phe Gln Cys Thr Ala Pro Asp Arg Val Asp Arg Val
325 330 335

Phe Lys Ile Tyr Arg Thr Thr Ala Leu Asp Gln Lys Leu Val Lys Lys
340 345 350

Thr Phe Lys Leu Val Asp Glu Thr Leu Arg Arg Arg Asn Leu Phe Glu
355 360 365

Ala Gly Leu Leu
370

<210> 47
<211> 1362
<212> DNA
<213> Pisum sativum

<400> 47
gcggccggtc gaccttgctt tcaactttca cttcacacta taatcccaaa aatctaacgg 60

catattccat ctctgcaaaa cataaagact tccttttgct tcttttcgga aagtatgggc 120

ttagtctgta gcagaaatcg gcgttatcgg gattctgatc ctgaagaaaa tgcacaggca 180

gcagaaattg aaagaagaat agagtcagaa acaaaggctg agaaacatat tcagaaactt 240

ctactactag gtgcgggaga gtccgggaaa tctacaatct ttaagcagat taaacttttg 300

tttcaaactg gctttgatga ggctgagcta agaagctaca caccagtcat ttttgctaat 360

gtgtatcaga ctataaaagt actgcatgat ggggcaaagg agttggctca aaacgatctt 420

aattctgcaa agtatgttat atccgatgag agcaaggaca ttggtgaaaa actttcagaa 480

attggaagca ggctggatta tcctcatctc actaaggatc ttgcaaagga aatagagact 540

ctatgggagg atgctgccat tcaggaaaca tatgcccgtg gtaatgaact ccaagttcct 600

gattgtacca aatatttcat ggaaaatttg cagaggttgt ctgatgctaa ttacgttcct 660

acaaaggggg atgttttgta tgcaagagtt cgtacaactg gtgttgtgga gatccagttc 720

agccctgttg gagaaaataa gagaagtggt gaagtctata gactctttga tgttggtggc 780

cagagaaatg agaggagaaa gtggatccat ctttttgaag gagttacagc tgttatattc 840

tgtgctgcaa ttagcgagta tgatcaaaca ctttttgagg atgaaagcaa gaacagactg 900

atggaaacta aggagctttt tgaatggatc ctgaagcaac catgttttga gaaaacgtcc 960

ttcatgttat ttttaaacaa gtttgacata tttgagaaga agatcctgaa tgttccgctc 1020

aacgtatgtg aatggttcaa agattatcag ccagtttcat cagggaaaca agagattgag 1080

cacgcatatg agtttgtgaa gaaaaagttt gaggaattat acttccagag ctctgctcct 1140

gaccgtgtag atcgcgtctt caagatctat cgtaccactg cccttgatca gaaggttgtg 1200

aagaagactt tcaagcttgt tgatgagacg ttgaggcgga ggaatctttt tgaagcggga 1260

ttattatgac catgcaacat tgtgcataag ataaaaggga taaaattatt tttacattga 1320

agagctaatc agattttggg tatactaggt cgacgcggcc gc 1362

<210> 48
<211> 384
<212> PRT
<213> Pisum sativum

<400> 48

Met Gly Leu Val Cys Ser Arg Asn Arg Arg Tyr Arg Asp Ser Asp Pro
1 5 10 15

Glu Glu Asn Ala Gln Ala Ala Glu Ile Glu Arg Arg Ile Glu Ser Glu
20 25 30

Thr Lys Ala Glu Lys His Ile Gln Lys Leu Leu Leu Leu Gly Ala Gly
35 40 45

Glu Ser Gly Lys Ser Thr Ile Phe Lys Gln Ile Lys Leu Leu Phe Gln
50 55 60

Thr Gly Phe Asp Glu Ala Glu Leu Arg Ser Tyr Thr Pro Val Ile Phe
65 70 75 80

Ala Asn Val Tyr Gln Thr Ile Lys Val Leu His Asp Gly Ala Lys Glu
85 90 95

Leu Ala Gln Asn Asp Leu Asn Ser Ala Lys Tyr Val Ile Ser Asp Glu
100 105 110

Ser Lys Asp Ile Gly Glu Lys Leu Ser Glu Ile Gly Ser Arg Leu Asp
115 120 125

Tyr Pro His Leu Thr Lys Asp Leu Ala Lys Glu Ile Glu Thr Leu Trp
130 135 140

Glu Asp Ala Ala Ile Gln Glu Thr Tyr Ala Arg Gly Asn Glu Leu Gln
145 150 155 160

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Val Pro Asp Cys Thr Lys Tyr Phe Met Glu Asn Leu Gln Arg Leu Ser
                165                 170                 175

Asp Ala Asn Tyr Val Pro Thr Lys Gly Asp Val Leu Tyr Ala Arg Val
            180                 185                 190

Arg Thr Thr Gly Val Val Glu Ile Gln Phe Ser Pro Val Gly Glu Asn
        195                 200                 205

Lys Arg Ser Gly Glu Val Tyr Arg Leu Phe Asp Val Gly Gly Gln Arg
    210                 215                 220

Asn Glu Arg Arg Lys Trp Ile His Leu Phe Glu Gly Val Thr Ala Val
225                 230                 235                 240

Ile Phe Cys Ala Ala Ile Ser Glu Tyr Asp Gln Thr Leu Phe Glu Asp
                245                 250                 255

Glu Ser Lys Asn Arg Leu Met Glu Thr Lys Glu Leu Phe Glu Trp Ile
            260                 265                 270

Leu Lys Gln Pro Cys Phe Glu Lys Thr Ser Phe Met Leu Phe Leu Asn
        275                 280                 285

Lys Phe Asp Ile Phe Glu Lys Lys Ile Leu Asn Val Pro Leu Asn Val
    290                 295                 300

Cys Glu Trp Phe Lys Asp Tyr Gln Pro Val Ser Ser Gly Lys Gln Glu
305                 310                 315                 320

Ile Glu His Ala Tyr Glu Phe Val Lys Lys Lys Phe Glu Glu Leu Tyr
                325                 330                 335

Phe Gln Ser Ser Ala Pro Asp Arg Val Asp Arg Val Phe Lys Ile Tyr
            340                 345                 350

Arg Thr Thr Ala Leu Asp Gln Lys Val Val Lys Lys Thr Phe Lys Leu
        355                 360                 365

Val Asp Glu Thr Leu Arg Arg Arg Asn Leu Phe Glu Ala Gly Leu Leu
    370                 375                 380
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<210> 49
<211> 1775
<212> DNA
<213> Pisum sativum

<400> 49
cgcggccggt cgaccacctt tcggcgctct ttttctttta tcccattttt ttcctccacg 60

cacccccttt tttctcatta tttcttttca caccctcatc aaccaccacc accatatatg 120

tttttctctt cccattattg ccaacagtat atgcaaatca aaaccatatc ataaaaattt 180

ctttttttatt ttcattatta ttattataac tgaacctgca tcactcaaat ctaacaacac 240

actttcaggt gaaatcaagt tgattattgt gtatacatat attagagaag ggcattgaat 300

tacagtgtga tttctgcggg agcttgagta gtcatcttct atgctgtgtt ttgtaacaga 360

aaatatgggc ttactctgta gcaaaagtaa ccgttacaat gatgccaaag ctgaagaaaa 420

tgcacagact gcagaaattg aaagaagaat agagttagaa acaaaggctg aaaagcatat 480

cagaaaactt ctactactag gagctggaga gtcggggaag tccacaatat ttaagcagat 540

aaaactttta tttcaaactg gctttgatga ggcagagcta aaaagctatc taccagtcgt 600

tcatgctaat gtatatcaga caataaaatt acttcatgat ggatcgaagg agtttgcaca 660

gaatgatgtt gatttttcga agtatgttat atctactgaa aataaggaca ttggtgaaaa 720

gttatcagaa attggtggca gactggatta tccacgtctc accaaagaac ttgcacagga 780

aattgagagt atctggaagg atgctgcaat tcaggaaaca tatgcccgtg gtaatgagct 840

ccaagttccg gattgtacgc actatttcat ggaaaatttg cagaggctgt ctgatgcaaa 900

ttatgttcca acaaaggagg atgtcttact tgccagagtt cgtactaccg gtgttgtaga 960

gatccagttc agccctgttg gagaaaacaa gaaaagtggt gaagtctata gactgtttga 1020

tgtcggcggc cagagaaatg agaggaggaa atggatccat ctgtttgaag gagtttccgc 1080

tgtaatattc tgtgttgcga ttagcgaata cgatcaaaca ctttttgaag atgagaacaa 1140

gaacagaatg atggagacaa aggaactttt tgaatgggtc ctgaagcaac aatgttttga 1200

gaaaacatcc ttcatgttgt ttttgaacaa gttcgacata tttgagaaga agatcctgga 1260

tgtcccactt aatgtatgtg agtggttcaa agattaccag ccagtttcaa ccgggaagca 1320

agagatcgag catgcatacg agtttgtgaa gaaaaaattt gaggaatcat atttccagag 1380

cactgctccg gatagcgtag accgcgtgtt caaaatctat aggaccactg cacttgatca 1440

gaaggttgtg aagaagacat tcaagctcgt tgacgagact ttgagacgaa gaaatctctt 1500

tgaggctggc ttgttatgac cagtgaatga gtcatgtttt ataagaggga taaagtgttt 1560

tttatagtga agaggtgaga tcagattttg ggtatactaa acattaaatc gatttgttga 1620

ttttatttct agtaaaatct tgttggagtg agtggatgga gaaaagcctt tatatagtga 1680

tcttcacact catcttcaaa gggtaaattt gtttcaagat ttgatatcat gatttgtgat 1740

tatgttttta tagaccaaaa aaaaaaaaaa aaaaa 1775

<210> 50
<211> 384
<212> PRT
<213> Pisum sativum

<400> 50

Met Gly Leu Leu Cys Ser Lys Ser Asn Arg Tyr Asn Asp Ala Lys Ala
1 5 10 15

Glu Glu Asn Ala Gln Thr Ala Glu Ile Glu Arg Arg Ile Glu Leu Glu
20 25 30

Thr Lys Ala Glu Lys His Ile Arg Lys Leu Leu Leu Leu Gly Ala Gly
35 40 45

Glu Ser Gly Lys Ser Thr Ile Phe Lys Gln Ile Lys Leu Leu Phe Gln
50 55 60

Thr Gly Phe Asp Glu Ala Glu Leu Lys Ser Tyr Leu Pro Val Val His
65 70 75 80

Ala Asn Val Tyr Gln Thr Ile Lys Leu Leu His Asp Gly Ser Lys Glu
85 90 95

Phe Ala Gln Asn Asp Val Asp Phe Ser Lys Tyr Val Ile Ser Thr Glu
100 105 110

Asn Lys Asp Ile Gly Glu Lys Leu Ser Glu Ile Gly Gly Arg Leu Asp
115 120 125

Tyr Pro Arg Leu Thr Lys Glu Leu Ala Gln Glu Ile Glu Ser Ile Trp
130 135 140

Lys Asp Ala Ala Ile Gln Glu Thr Tyr Ala Arg Gly Asn Glu Leu Gln
145 150 155 160

Val Pro Asp Cys Thr His Tyr Phe Met Glu Asn Leu Gln Arg Leu Ser
165 170 175

Asp Ala Asn Tyr Val Pro Thr Lys Glu Asp Val Leu Leu Ala Arg Val
180 185 190

Arg Thr Thr Gly Val Val Glu Ile Gln Phe Ser Pro Val Gly Glu Asn
195 200 205

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Lys Lys Ser Gly Glu Val Tyr Arg Leu Phe Asp Val Gly Gly Gln Arg
    210                 215                 220

Asn Glu Arg Arg Lys Trp Ile His Leu Phe Glu Gly Val Ser Ala Val
225                 230                 235                 240

Ile Phe Cys Val Ala Ile Ser Glu Tyr Asp Gln Thr Leu Phe Glu Asp
                245                 250                 255

Glu Asn Lys Asn Arg Met Met Glu Thr Lys Glu Leu Phe Glu Trp Val
            260                 265                 270

Leu Lys Gln Gln Cys Phe Glu Lys Thr Ser Phe Met Leu Phe Leu Asn
        275                 280                 285

Lys Phe Asp Ile Phe Glu Lys Lys Ile Leu Asp Val Pro Leu Asn Val
    290                 295                 300

Cys Glu Trp Phe Lys Asp Tyr Gln Pro Val Ser Thr Gly Lys Gln Glu
305                 310                 315                 320

Ile Glu His Ala Tyr Glu Phe Val Lys Lys Lys Phe Glu Glu Ser Tyr
                325                 330                 335

Phe Gln Ser Thr Ala Pro Asp Ser Val Asp Arg Val Phe Lys Ile Tyr
            340                 345                 350

Arg Thr Thr Ala Leu Asp Gln Lys Val Val Lys Lys Thr Phe Lys Leu
        355                 360                 365

Val Asp Glu Thr Leu Arg Arg Arg Asn Leu Phe Glu Ala Gly Leu Leu
    370                 375                 380
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<210> 51
<211> 384
<212> PRT
<213> Lycopersicon esculentum

<400> 51

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Met Gly Ser Leu Cys Ser Arg Asn Lys His Tyr Ser Gln Ala Asp Asp
1               5                   10                  15

Glu Glu Asn Thr Gln Thr Ala Glu Ile Glu Arg Arg Ile Glu Gln Glu
            20                  25                  30

Thr Lys Ala Glu Lys His Ile Gln Lys Leu Leu Leu Leu Gly Ala Gly
        35                  40                  45
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Asp Ser Gly Lys Ser Thr Ile Phe Lys Gln Ile Lys Leu Leu Phe Gln
50 55 60

Thr Gly Phe Asp Glu Glu Glu Leu Lys Asn Tyr Ile Pro Val Ile His
65 70 75 80

Ala Asn Val Tyr Gln Thr Thr Lys Ile Leu His Asp Gly Ser Lys Glu
85 90 95

Leu Ala Gln Asn Glu Leu Glu Ala Ser Lys Tyr Leu Leu Ser Ala Glu
100 105 110

Asn Lys Glu Ile Gly Glu Lys Leu Ser Glu Ile Gly Gly Arg Leu Asp
115 120 125

Tyr Pro His Leu Thr Lys Asp Leu Val Gln Asp Ile Glu Ala Leu Trp
130 135 140

Lys Asp Pro Ala Ile Gln Glu Thr Leu Leu Arg Gly Asn Glu Leu Gln
145 150 155 160

Val Pro Asp Cys Ala His Tyr Phe Met Glu Asn Leu Glu Arg Phe Ser
165 170 175

Asp Val His Tyr Ile Pro Thr Lys Glu Asp Val Leu Phe Ala Arg Ile
180 185 190

Arg Thr Thr Gly Val Val Glu Ile Gln Phe Ser Pro Val Gly Glu Asn
195 200 205

Lys Lys Ser Gly Glu Val Tyr Arg Leu Phe Asp Val Gly Gly Gln Arg
210 215 220

Asn Glu Arg Arg Lys Trp Ile His Leu Phe Glu Gly Val Thr Ala Val
225 230 235 240

Ile Phe Cys Ala Ala Ile Ser Glu Tyr Asp Gln Thr Leu Phe Glu Asp
245 250 255

Glu Arg Lys Asn Arg Met Met Glu Thr Lys Glu Leu Phe Glu Trp Val
260 265 270

Leu Lys Gln Pro Cys Phe Glu Lys Thr Ser Phe Met Leu Phe Leu Asn
275 280 285

Lys Phe Asp Ile Phe Glu Gln Lys Val Pro Lys Val Pro Leu Asn Ala
290 295 300

Cys Glu Trp Phe Lys Asp Tyr Gln Ser Val Ser Thr Gly Lys Gln Glu
305 310 315 320

Ile Glu His Ala Tyr Glu Phe Val Lys Lys Lys Phe Glu Glu Ser Tyr
325 330 335

Phe Gln Cys Thr Ala Pro Asp Arg Val Asp Arg Val Phe Lys Ile Tyr
340 345 350

Arg Thr Thr Ala Leu Asp Gln Lys Leu Val Lys Lys Thr Phe Lys Leu
355 360 365

Val Asp Glu Thr Leu Arg Arg Arg Asn Leu Phe Glu Ala Gly Leu Leu
370 375 380

<210> 52
<211> 1660
<212> DNA
<213> Spinacia oleracea

<400> 52
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gtcaagcaag gctgtactct gtcacccaac tacccaacac ccaacaccac cgtccaccac 120

cgtccaccac tacggctgca gaatcaccgc cattagcata agcagctgaa ccctaattta 180

cagaataatt acaattacaa ttgcaattcc atacgcttag catgggacta ctttgcagca 240

agcatcaaca ttccaccaaa cctgatgctg aaaatgccca ggcaacaggg atagaaagaa 300

ggattgagcg agagactatt gctgaaaagc atattcagaa actcttatta cttggtgctg 360

gagagtccgg aaagtcaaca atatttaagc agattaaact tttatttcag atgggatttg 420

atgatgcaga gttgaacagc tatacacccg ttattcatgc caatgtctat cagactatca 480

aattattgat tgatggttcc aaggaactgg ctcaaaatga aacagattct tcaaagtata 540

gcttgtcccc tgataacaag gaaattgggg acaagctgtc agaaattggg ggcaggttgg 600

actatccaca actcaccaaa gaactttctg aggaaataga aaaaatatgg aatgatccgg 660

caattcagga aactcatgcc cgcagcagcg aactccaact tccagactgt gccaattatt 720

tcatggaaca cctagacaga ctttctgatg taaattatat ccctacaaag gaagatgttc 780

tctatgcccg agtccgcaca acaggtgttg ttgagatcca gttcagtcca gttggagaaa 840

ataagaaaag tggtgaggta tatagacttt ttgatgttgg aggccaaaga aatgagcgaa 900

gaaagtggat ccatcttttt gaaggtgtta cagcagtaat cttttgtgct gctataagcg 960

attatgatca aatgctctat gaggatgaga acaagaatcg gatggttgaa actaaggagc 1020

tttttgagtg ggtcttgaag cagcgctgct ttgagagaac atccatcatg ctgttcctga 1080

acaagtttga tattttcgag aagaaggttc agaaagttcc actaagtaca tgcgaatggt 1140

ttaaggatta ccagccagtt tcgtctggac aacaagagat tgagcatacc tacgagtttg 1200

ttaagaagaa atttgaggag ctctattacc aatgcactgc ccctgatcgt gttgatcgag 1260

ttttcaagat ttacagaaca actgctcttg accagaagct tgtaaagaag actttcaaac 1320

tgctagatga gactctcaga aggagaaacc ttgttgaggc aggtttgtta tgatacagaa 1380

tggcaatttc ggtgtgagtt tgttaatagt atttggttct gggggggttct gatcatatgt 1440

tgaagtgtca aattgaatta attaaaagag ggaccagaat tttttgacac caaatttgac 1500

tactgtcttt acactacatt acttttagag attacagtgt tgagtccaca tgtttgaagt 1560

ttgaactctc tgttacatat attgtcttgc ctccatcctg ttggagcgcc agaatacctt 1620

gtagcttaat atttcaatca gaagattatt tattggccgc 1660

<210> 53
<211> 383
<212> PRT
<213> Spinacia oleracea

<400> 53

Met Gly Leu Leu Cys Ser Lys His Gln His Ser Thr Lys Pro Asp Ala
1 5 10 15

Glu Asn Ala Gln Ala Thr Gly Ile Glu Arg Arg Ile Glu Arg Glu Thr
20 25 30

Ile Ala Glu Lys His Ile Gln Lys Leu Leu Leu Leu Gly Ala Gly Glu
35 40 45

Ser Gly Lys Ser Thr Ile Phe Lys Gln Ile Lys Leu Leu Phe Gln Met
50 55 60

Gly Phe Asp Asp Ala Glu Leu Asn Ser Tyr Thr Pro Val Ile His Ala
65 70 75 80

Asn Val Tyr Gln Thr Ile Lys Leu Leu Ile Asp Gly Ser Lys Glu Leu
85 90 95

Ala Gln Asn Glu Thr Asp Ser Ser Lys Tyr Ser Leu Ser Pro Asp Asn
100 105 110

Lys Glu Ile Gly Asp Lys Leu Ser Glu Ile Gly Gly Arg Leu Asp Tyr
115 120 125

Pro Gln Leu Thr Lys Glu Leu Ser Glu Glu Ile Glu Lys Ile Trp Asn
130 135 140

Asp Pro Ala Ile Gln Glu Thr His Ala Arg Ser Ser Glu Leu Gln Leu
145 150 155 160

Pro Asp Cys Ala Asn Tyr Phe Met Glu His Leu Asp Arg Leu Ser Asp
165 170 175

Val Asn Tyr Ile Pro Thr Lys Glu Asp Val Leu Tyr Ala Arg Val Arg
180 185 190

Thr Thr Gly Val Val Glu Ile Gln Phe Ser Pro Val Gly Glu Asn Lys
195 200 205

Lys Ser Gly Glu Val Tyr Arg Leu Phe Asp Val Gly Gly Gln Arg Asn
210 215 220

Glu Arg Arg Lys Trp Ile His Leu Phe Glu Gly Val Thr Ala Val Ile
225 230 235 240

Phe Cys Ala Ala Ile Ser Asp Tyr Asp Gln Met Leu Tyr Glu Asp Glu
245 250 255

Asn Lys Asn Arg Met Val Glu Thr Lys Glu Leu Phe Glu Trp Val Leu
260 265 270

Lys Gln Arg Cys Phe Glu Arg Thr Ser Ile Met Leu Phe Leu Asn Lys
275 280 285

Phe Asp Ile Phe Glu Lys Lys Val Gln Lys Val Pro Leu Ser Thr Cys
290 295 300

Glu Trp Phe Lys Asp Tyr Gln Pro Val Ser Ser Gly Gln Gln Glu Ile
305 310 315 320

Glu His Thr Tyr Glu Phe Val Lys Lys Lys Phe Glu Glu Leu Tyr Tyr
325 330 335

Gln Cys Thr Ala Pro Asp Arg Val Asp Arg Val Phe Lys Ile Tyr Arg
340 345 350

Thr Thr Ala Leu Asp Gln Lys Leu Val Lys Lys Thr Phe Lys Leu Leu
355 360 365

Asp Glu Thr Leu Arg Arg Arg Asn Leu Val Glu Ala Gly Leu Leu
370 375 380

<210> 54
<211> 1719
<212> DNA
<213> Glycine max

<400> 54
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agcccgctaa tgtgtgtaca cattagagaa gggcattgaa acaaagtgtg atttctggtg 120

gagcttgact agtcatcttc tatgctgtct tttgtacaga aaatatgggc ttactctgta 180

gcagaaatcg ccgttataat gatgctgatg ctgaagaaaa tgcacagact gcagagattg 240

aaagaagaat agaggttaga aacgaaaggg ctgaaaagca tattcagaaa cttctactac 300

ttggagctgg agagtcaggg aagtccacaa tatttaagca gataaaactt ttgtttcaaa 360

ctggctttga cgaggcagaa ctaaaaagct acttaccagt cattcatgca aatgtgtatc 420

agacaataaa attactgcat gatggatcaa aggaatttgc ccagaatgat gttgattctt 480

caaagtatgt tatatccaat gaaaataagg aaatcgggga aaagttattg gaaattggag 540

gcaggctgga ttacccatat ctcagcaagg agcttgcaca ggaaattgag aatctgtgga 600

aggatcctgc aattcaggag acatatgccc gaggtagtga gcttcaaatt ccagattgta 660

ctgattattt catggaaaat ttgcaaaggc tgtctgatgc aaattatgtt ccaacaaagg 720

aggatgtttt gtatgcaaga gtgcgtacca ctggtgttgt agagatccag ttcagtcctg 780

ttggggaaaa taagaaaagt gatgaagtct atagactctt tgatgttggc ggccagagaa 840

atgagaggag aaagtggatc catttgtttg aaggagtttc agctgtaata ttctgtgctg 900

caattagcga gtatgatcag acacttttg aggatgaaaa cagaaacaga atgatggaga 960

ccaaggaact tttcgagtgg atcctgaagc aaccatgttt tgagaaaacg tccttcatgt 1020

tattcttaaa caagtttgac atatttgaga agaagatcct gaaagtccca cttaatgtat 1080

gtgagtggtt caaagattac caaccggttt caacagggaa acaagagatt gagcatgcat 1140

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gagcactgaa ccatacatgt tataaaatgg gataacaata tttttacatt gaagaggtga 1380

ccagattttg ggtatactag gcgattcagg tatactaaat attaaaatcg atttgttgat 1440

ttttatttct aagttaatct tgtggagaga agaaaggcct tgcttggagt tgatatcata 1500

atctgtgatc atatttttat agattgaaag tcactaatca tatgatatat ttcatactat 1560

tagtgattat attttgcctc tagtgttgtt gtgttaatgt gcatacatgc atcatgcaga 1620

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gtcgagtctg aattcagacc ttatattaaa tttgctttt 1719

<210> 55
<211> 385
<212> PRT
<213> Glycine max

<400> 55

Met Gly Leu Leu Cys Ser Arg Asn Arg Arg Tyr Asn Asp Ala Asp Ala
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Glu Glu Asn Ala Gln Thr Ala Glu Ile Glu Arg Arg Ile Glu Val Arg
20 25 30

Asn Glu Arg Ala Glu Lys His Ile Gln Lys Leu Leu Leu Leu Gly Ala
35 40 45

Gly Glu Ser Gly Lys Ser Thr Ile Phe Lys Gln Ile Lys Leu Leu Phe
50 55 60

Gln Thr Gly Phe Asp Glu Ala Glu Leu Lys Ser Tyr Leu Pro Val Ile
65 70 75 80

His Ala Asn Val Tyr Gln Thr Ile Lys Leu Leu His Asp Gly Ser Lys
85 90 95

Glu Phe Ala Gln Asn Asp Val Asp Ser Ser Lys Tyr Val Ile Ser Asn
100 105 110

Glu Asn Lys Glu Ile Gly Glu Lys Leu Leu Glu Ile Gly Gly Arg Leu
115 120 125

Asp Tyr Pro Tyr Leu Ser Lys Glu Leu Ala Gln Glu Ile Glu Asn Leu
130 135 140

Trp Lys Asp Pro Ala Ile Gln Glu Thr Tyr Ala Arg Gly Ser Glu Leu
145 150 155 160

Gln Ile Pro Asp Cys Thr Asp Tyr Phe Met Glu Asn Leu Gln Arg Leu
165 170 175

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Ser Asp Ala Asn Tyr Val Pro Thr Lys Glu Asp Val Leu Tyr Ala Arg
            180                 185                 190

Val Arg Thr Thr Gly Val Val Glu Ile Gln Phe Ser Pro Val Gly Glu
        195                 200                 205

Asn Lys Lys Ser Asp Glu Val Tyr Arg Leu Phe Asp Val Gly Gly Gln
    210                 215                 220

Arg Asn Glu Arg Arg Lys Trp Ile His Leu Phe Glu Gly Val Ser Ala
225                 230                 235                 240

Val Ile Phe Cys Ala Ala Ile Ser Glu Tyr Asp Gln Thr Leu Phe Glu
                245                 250                 255

Asp Glu Asn Arg Asn Arg Met Met Glu Thr Lys Glu Leu Phe Glu Trp
            260                 265                 270

Ile Leu Lys Gln Pro Cys Phe Glu Lys Thr Ser Phe Met Leu Phe Leu
        275                 280                 285

Asn Lys Phe Asp Ile Phe Glu Lys Lys Ile Leu Lys Val Pro Leu Asn
    290                 295                 300

Val Cys Glu Trp Phe Lys Asp Tyr Gln Pro Val Ser Thr Gly Lys Gln
305                 310                 315                 320

Glu Ile Glu His Ala Tyr Glu Phe Val Lys Lys Lys Phe Glu Glu Ser
                325                 330                 335

Tyr Phe Gln Ser Thr Ala Pro Asp Arg Val Asp Arg Val Phe Lys Ile
            340                 345                 350

Tyr Arg Thr Thr Ala Leu Asp Gln Lys Val Val Lys Lys Thr Phe Lys
        355                 360                 365

Leu Val Asp Glu Thr Leu Arg Arg Arg Asn Leu Leu Glu Ala Gly Leu
    370                 375                 380

Leu
385
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<210> 56
<211> 1624
<212> DNA

<213> Glycine max

<400> 56

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gctgaagaaa atgctcagga tgcagaaatt gaaagaagaa tcgagttaga aacaaaggct 240

gaaaagcata ttcagaaact tttactacta ggtgctggag agtctgggag gtctacaata 300

tttaagcaga taaaactttt gtttcaaact ggctttaatg aggctgagct taaaagctac 360

ataccagtcg ttcatgctaa tgtgtatcaa acaataaaag tactgcagga tgggtcgaaa 420

gagttggcgc agaatgactt tgattcttca aagtatgtaa tatctaatga aaaccaggac 480

attggtcaaa agctctcaga aattggaggc accctggttt acccgcgtct taccaaagag 540

cttgcacagg aaatagagac tatgtgggag gatgctgcaa ttcaggaaac atatgcccgt 600

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ccatgttttg agaaaacatc cttcatgtta tttttaaaca agtttgacat atttgaaaag 1020

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tcaacagaga aacaagagat tgaacatgcg tacgagtttg tgaagaaaaa gtttgaggaa 1140

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actgcccctg accagaagct tgtgaagaag accttcaagc ttggtgatga gactttgaga 1260

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tattagaggt caggtataca acaatataaa atcgatttgt tgattttatg tcaaagtaaa 1440

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aaggtttttt agttgggctc aaattttcag acatgacatt atgctttgtg attatctttt 1560

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aaaa 1624

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<211> 385
<212> PRT
<213> Glycine max

<400> 57

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Thr Lys Ala Glu Lys His Ile Gln Lys Leu Leu Leu Leu Gly Ala Gly
35 40 45

Glu Ser Gly Arg Ser Thr Ile Phe Lys Gln Ile Lys Leu Leu Phe Gln
50 55 60

Thr Gly Phe Asn Glu Ala Glu Leu Lys Ser Tyr Ile Pro Val Val His
65 70 75 80

Ala Asn Val Tyr Gln Thr Ile Lys Val Leu Gln Asp Gly Ser Lys Glu
85 90 95

Leu Ala Gln Asn Asp Phe Asp Ser Ser Lys Tyr Val Ile Ser Asn Glu
100 105 110

Asn Gln Asp Ile Gly Gln Lys Leu Ser Glu Ile Gly Gly Thr Leu Val
115 120 125

Tyr Pro Arg Leu Thr Lys Glu Leu Ala Gln Glu Ile Glu Thr Met Trp
130 135 140

Glu Asp Ala Ala Ile Gln Glu Thr Tyr Ala Arg Gly Asn Glu Leu Gln
145 150 155 160

Val Pro Asp Cys Ala His Tyr Phe Met Glu Asn Leu Glu Arg Leu Ser
165 170 175

Asp Ala Asn Tyr Val Pro Thr Lys Glu Asp Phe Leu Tyr Ala Arg Val
180 185 190

Arg Thr Thr Gly Val Val Glu Ile Gln Phe Ser Pro Val Gly Glu Asn
195 200 205

Lys Arg Ser Gly Glu Val Tyr Arg Leu Phe Asp Val Gly Gly Gln Arg
210 215 220

Asn Glu Arg Arg Lys Trp Ile His Leu Phe Glu Gly Val Thr Ala Val
225 230 235 240

Ile Phe Cys Ser Ala Ile Ser Glu Tyr Asp Gln Thr Leu Tyr Glu Asp
245 250 255

Glu Asn Lys Asn Arg Met Met Glu Thr Lys Glu Leu Phe Glu Trp Val
260 265 270

Leu Arg Gln Pro Cys Phe Glu Lys Thr Ser Phe Met Leu Phe Leu Asn
275 280 285

Lys Phe Asp Ile Phe Glu Lys Lys Val Leu Asn Val Pro Leu Asn Val
290 295 300

Cys Glu Trp Phe Lys His Asp Tyr Gln Pro Val Ser Thr Glu Lys Gln
305 310 315 320

Glu Ile Glu His Ala Tyr Glu Phe Val Lys Lys Lys Phe Glu Glu Leu
325 330 335

Tyr Phe Gln Ser Thr Ala Pro Asp Cys Val Asp Arg Val Phe Lys Ile
340 345 350

Tyr Gln Ala Thr Ala Pro Asp Gln Lys Leu Val Lys Lys Thr Phe Lys
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370 375 380

Leu
385

<210> 58
<211> 1740
<212> DNA
<213> Lupinus luteus

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tcagtgaaat ctagtgtcat attccaccac ctcttcacag aacccctttg ctttttttca 180

tttcttttca gaaaatatgg gcttactctg cagcagaaat cgtcgttata atgacgctga 240

tgctgaagaa aacgcgcagg ctgcagaaat tgaaagaaga atagagttag aaacaaaggc 300

tgaaaagcat attcagaaac ttctactact aggtgctgga gagtcaggga agtctacaat 360

atttaagcag ataaaacttt tgtttcaaac tggctttgac gaggcagagc taaaaagcta 420

cttaccggtc attcatgcta acgtttttca gacaataaaa ttactgcatg atgggtcgaa 480

ggagttggct cagaatgatg ttgattcttc aaagtatgtt atatctgatg aaaacaagga 540

cattggtgaa aaactctcag aaattggaag caagctggac tacccatatc tcaccacgga 600

gcttgcaaag gaaatagaga ctctgtggga ggatgctgca attcaggaaa catatgctcg 660

tggcaatgaa ctccaagttc caggctgtgc ccattatttt atggaaaatc tgcaaaggct 720

gtctgatgca aattatgttc ccaccaagga ggatgtttta tatgcacgag ttcgtacaac 780

tggtgttgta gagatacagt tcagccctgt tggtgaaaat aagagaagtg gcgaagtcta 840

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ggatgaaaac aagaacagaa tgaccgagac taaggagctt tttgagtgga tcctgaagca 1020

accatgtttt gagaaaacat ccttcatgtt atttttaaac aaatttgaca tatttgagaa 1080

gaagatcctg aaagtcccac tcaatgtttg tgagtggttc aaagattacc agccagtttc 1140

aacagggaaa caagagattg aacatgcata tgagtttgtg aagaaaaagt ttgaggaatt 1200

atatttccag agcactgctc ctgaacgagt cgatcgcgtc tttaaggtct accggactac 1260

tgcccttgat cagaagctca tcaagaagac tttcaaactc gtcgatgaga gtttgaggcg 1320

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tgagtgggta gatggggaaa gacctttatg aagttttcaa catggcatca ttatttgttg 1560

attaagacta accaatgata tatttcatat ttcatatttc atttctgcta ttgtgtttta 1620

ttaatgagct gttacccaag gttctgtgat gaatatgaaa tactttgctc tttttgccat 1680

aatgaaactt caatacttca ttgttagagc ttttttgcat gcttgtttag aagcggccgc 1740

<210> 59
<211> 384
<212> PRT
<213> Lupinus luteus

<400> 59

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20 25 30

Thr Lys Ala Glu Lys His Ile Gln Lys Leu Leu Leu Leu Gly Ala Gly
35 40 45

Glu Ser Gly Lys Ser Thr Ile Phe Lys Gln Ile Lys Leu Leu Phe Gln
50 55 60

Thr Gly Phe Asp Glu Ala Glu Leu Lys Ser Tyr Leu Pro Val Ile His
65 70 75 80

Ala Asn Val Phe Gln Thr Ile Lys Leu Leu His Asp Gly Ser Lys Glu
85 90 95

Leu Ala Gln Asn Asp Val Asp Ser Ser Lys Tyr Val Ile Ser Asp Glu
100 105 110

Asn Lys Asp Ile Gly Glu Lys Leu Ser Glu Ile Gly Ser Lys Leu Asp
115 120 125

Tyr Pro Tyr Leu Thr Thr Glu Leu Ala Lys Glu Ile Glu Thr Leu Trp
130 135 140

Glu Asp Ala Ala Ile Gln Glu Thr Tyr Ala Arg Gly Asn Glu Leu Gln
145 150 155 160

Val Pro Gly Cys Ala His Tyr Phe Met Glu Asn Leu Gln Arg Leu Ser
165 170 175

Asp Ala Asn Tyr Val Pro Thr Lys Glu Asp Val Leu Tyr Ala Arg Val
180 185 190

Arg Thr Thr Gly Val Val Glu Ile Gln Phe Ser Pro Val Gly Glu Asn
195 200 205

Lys Arg Ser Gly Glu Val Tyr Arg Leu Phe Asp Val Gly Gly Gln Arg
210 215 220

Asn Glu Arg Arg Lys Trp Ile His Leu Phe Glu Gly Val Ser Ala Val
225 230 235 240

Ile Phe Cys Ala Ala Ile Ser Glu Tyr Asp Gln Thr Leu Phe Glu Asp
245 250 255

Glu Asn Lys Asn Arg Met Thr Glu Thr Lys Glu Leu Phe Glu Trp Ile
260 265 270

Leu Lys Gln Pro Cys Phe Glu Lys Thr Ser Phe Met Leu Phe Leu Asn
275 280 285

Lys Phe Asp Ile Phe Glu Lys Lys Ile Leu Lys Val Pro Leu Asn Val
290 295 300

Cys Glu Trp Phe Lys Asp Tyr Gln Pro Val Ser Thr Gly Lys Gln Glu
305 310 315 320

Ile Glu His Ala Tyr Glu Phe Val Lys Lys Lys Phe Glu Glu Leu Tyr
325 330 335

Phe Gln Ser Thr Ala Pro Glu Arg Val Asp Arg Val Phe Lys Val Tyr
340 345 350

Arg Thr Thr Ala Leu Asp Gln Lys Leu Ile Lys Lys Thr Phe Lys Leu
355 360 365

Val Asp Glu Ser Leu Arg Arg Arg Asn Leu Phe Glu Ala Gly Leu Leu
370 375 380

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<211> 1617
<212> DNA
<213> Lotus japonicus

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acagataaaa cttttgtttc aaactggctt tgacgaggca gagctaaaaa gctaccaacc 240

agtcatacat gctaatgtat atcagacaat aaaattactg catgacggag caaaggagtt 300

ggcccagaat gatgttgatt tttcaaagta tgttatatcc gatgaaaaca aggaaattgg 360

ggaaaagtta tcagaaattg ggggcaggct ggattacccc tgtctcacca aggaactagc 420

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tgagctccaa gttccagatt gtacccacta tttcatggaa aatctgcaca gactgtccga 540

tgcaaattat gttccaacaa aggatgatgt tttgtatgca agagtgcgta ccactggtgt 600

tgtagagatc cagttcagcc ctgttggaga aaataagaaa agcggtgaag tctatagact 660

atttgatgtc ggcggtcaga gaaatgagag gcgaaaatgg atccatctgt ttgaaggagt 720

ttcagctgta atattctgtg ctgcaattag cgagtacgat caaacacttt ttgaggatga 780

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cctgaaagtc cctcttaatg tttgtgagtg gttcaaagat taccagccag tttcaacagg 960

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ccagaacact gccccggacc gtgtagatcg cgtcttcaag atctaccgga ccactgctct 1080

tgatcagaag gttgtgaaga agacattcaa gcttgttgat gagacattga gacggcggaa 1140

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<211> 384
<212> PRT
<213> Lotus japonicus

<400> 61

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20 25 30

Thr Lys Ala Glu Lys His Ile Gln Lys Leu Leu Leu Leu Gly Ala Gly
35 40 45

Glu Ser Gly Lys Ser Thr Ile Phe Lys Gln Ile Lys Leu Leu Phe Gln
50 55 60

Thr Gly Phe Asp Glu Ala Glu Leu Lys Ser Tyr Gln Pro Val Ile His
65 70 75 80

Ala Asn Val Tyr Gln Thr Ile Lys Leu Leu His Asp Gly Ala Lys Glu
85 90 95

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Leu Ala Gln Asn Asp Val Asp Phe Ser Lys Tyr Val Ile Ser Asp Glu
            100                 105                 110

Asn Lys Glu Ile Gly Glu Lys Leu Ser Glu Ile Gly Gly Arg Leu Asp
        115                 120                 125

Tyr Pro Cys Leu Thr Lys Glu Leu Ala Leu Glu Ile Glu Asn Leu Trp
    130                 135                 140

Lys Asp Ala Ala Ile Gln Glu Thr Tyr Ala Arg Gly Asn Glu Leu Gln
145                 150                 155                 160

Val Pro Asp Cys Thr His Tyr Phe Met Glu Asn Leu His Arg Leu Ser
                165                 170                 175

Asp Ala Asn Tyr Val Pro Thr Lys Asp Asp Val Leu Tyr Ala Arg Val
            180                 185                 190

Arg Thr Thr Gly Val Val Glu Ile Gln Phe Ser Pro Val Gly Glu Asn
        195                 200                 205

Lys Lys Ser Gly Glu Val Tyr Arg Leu Phe Asp Val Gly Gly Gln Arg
    210                 215                 220

Asn Glu Arg Arg Lys Trp Ile His Leu Phe Glu Gly Val Ser Ala Val
225                 230                 235                 240

Ile Phe Cys Ala Ala Ile Ser Glu Tyr Asp Gln Thr Leu Phe Glu Asp
                245                 250                 255

Glu Asn Lys Asn Arg Met Met Glu Thr Lys Glu Leu Phe Glu Trp Val
            260                 265                 270

Leu Lys Gln Pro Cys Phe Glu Lys Thr Ser Phe Met Leu Phe Leu Asn
        275                 280                 285

Lys Phe Asp Ile Phe Glu Lys Lys Ile Leu Lys Val Pro Leu Asn Val
    290                 295                 300

Cys Glu Trp Phe Lys Asp Tyr Gln Pro Val Ser Thr Gly Lys Gln Glu
305                 310                 315                 320

Ile Glu His Ala Tyr Glu Phe Val Lys Lys Lys Phe Glu Glu Ser Tyr
                325                 330                 335

Phe Gln Asn Thr Ala Pro Asp Arg Val Asp Arg Val Phe Lys Ile Tyr
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Arg Thr Thr Ala Leu Asp Gln Lys Val Val Lys Lys Thr Phe Lys Leu
355 360 365

Val Asp Glu Thr Leu Arg Arg Arg Asn Leu Phe Glu Ala Gly Leu Leu
370 375 380

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<400> 62
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<210> 66
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<400> 66
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<210> 67
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<212> DNA
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<210> 68
<211> 1902
<212> DNA
<213> Arabidopsis thaliana

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gctgaagcat gtctttcagt attaccttca tctgatcttc aattgccgtg attaagtaac 180

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gagtacctgc ataaacagat ttgaagtcac tgatttcctg caaagaggca tacttgtaaa 360

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gatcatcaga aaccaaatta gatagaacaa taaataaaga aggcggaagt tcaaagagca 480

ataccttagc aagctcctct ggtctcccgg catacatctg cggttgctcc tgtggcatac 540

gcgaattcac tctttcatca taagcattgc atattctatc aagcgcaccg atcttactag 600

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acagcataaa ttctttctaa ttatataaat ctaaccttgt tacattgtac atctataaat 1560

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cagtgattaa gttgaaccaa aaggtacgga ggagaaacaa gcatttgatt cttccttatt 1680

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<211> 2303
<212> DNA
<213> Arabidopsis thaliana

<220>
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tcagttaagt tttcggttca caaccaatat gttggagtgt tactaatcag atagacgggt 360

aaaataaatt gtttgcacaa cctattcata tagttaaaat aagcgaatag agagataatt 420

gaaactacag tgaaaattaa caacaaatgg aacatacgtc caagtagttg agacttgagg 480

agtagaaaga caacgtaagg agttgacaaa catgtgagcc atttgagact aattcacaga 540

caactaaaat ccaagagtta tactagtaaa tgctttggtt attttaatat attttcaagt 600

cgtctgcccg ttgaaaactg gagaaaatgt atatagagta ctatncagct cgaagacaaa 660

aatgtagtga ctaaaattaa aatgcttaat tggtcggata aacaatccaa aataaatggg 720

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cggacaaata ctgattattt tccctttata tatatatata tatataattg aatgcttcta 960

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caccatacaa actaagtgat ttttcagtag tttgtgatca atgcaaaaat gataaaatta 1140

atttaatgtt tacaaagctg atgttgggtc gaaagacttg gacgtcaagg ataacatttg 1200

gttctaaaat atatggacgt gaaagatagc ataccatctt tgggactgtt cggataagaa 1260

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agatatttca ttcttttagt accatataaa ttagggattt ggacaattca caattattta 1680

ttttaaacca aacaaaataa ttgttctccg ataatcagat gtgacttatg tgatatagta 1740

catataaata tacacactgt ttaaatttgt ctacccaatc ggaatcatag aaactttatt 1800

gtttacccaa acaaaacggt actgaatatc ggaacttttt ttattaaaaa aaaactgtga 1860

gagagaaatt gaatcaacgt ccaagtcact tgatgcaaga aaaaagcgaa accaattaaa 1920

ttcccgtaaa aacagaacac aaaagaacag gagagttaat gttctaactg acacgtgtcc 1980

ctaccttgcc atacactcac acaattaaaa tttctaactc tgtctcttat ccgaaaaata 2040

atcatctcca agtgtaataa gaaaatcaaa ataaaactct catttcttct tcttcctcgc 2100

ctataaatac aactccattc tctcatctcc tacatcacaa aacaaaaacc tcacttaaaa 2160

aaaaaaaaca gaagacagaa aaaaacaaaa aaaaaaagaa aaagaaaaat aaacaaattt 2220

tcttttcttt tttttcctct aaagtttcta ttttgtctat tcgtgttttt ttttttactt 2280

cctgataatg ggagcctatg aaa 2303

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<211> 2012
<212> DNA
<213> Arabidopsis thaliana

<400> 70
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tatagtatcc tttgaaaacg gagaaacaaa taacaatgtg gacaaactag atataatttc 240

aacacaagac tatgggaatg attttaccca ctaattataa tccgatcaca aggtttcaac 300

gaactagttt tccagatatc aaccaaattt actttggaat taaactaact taaaactaat 360

tggttgttcg taaatggtgc ttttttttt tgcggatgtt agtaaagggt tttatgtatt 420

ttatattatt agttatctgt tttcagtgtt atgttgtctc atccataaag tttatatgtt 480

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gatactgatc ggcatttttt ttggtaaaaa atatatgcat gaaaaactca agtgtttctt 600

ttttaaggaa tttttaaatg gtgattatat gaatataatc atatgtatat ccgtatatat 660

atgtagccag atagttaatt atttgggggga tatttgaatt attaatgtta taatattctt 720

tcttttgact cgtctggtta aattaaagaa caaaaaaaac acatactttt actgttttaa 780

aaggttaaat taacataatt tattgattac aagtgtcaag tccatgacat tgcatgtagg 840

ttcgagactt cagagataac ggaagagatc gataattgtg atcgtaacat ccagatatgt 900

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<211> 1300
<212> DNA

<213> Arabidopsis thaliana

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gcaaaaaaaa aatctaaatg gatgtttagg tataactgca acaaaattta tggaaaaaac 180

aagacttgat gaatgtataa tctcaagagt tattttaagc ataaatttaa atctaaattt 240

tctatttaaa attatttgat gaatttttct atttttaatt atgataaatg caagattcat 300

agtatctaaa tttaatacag tatatgatta ggcttttcat taaacaatat aaatattttt 360

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ataccattca aaagaagaaa aaacactttc tcttacttat ctttgaatta attttgaaat 480

atttcattaa gaaaaattaa ttgtttaaaa tattgctttg attaatgtag acactccttt 540

agaaaacttt ttaaaggtta gggaaaaaat gttaccaaaa aaaagttagg aaaaaaatgt 600

aaaaataaag aaaagaatct tcttccccta atagaatcca aacaaatgta tcgcttacca 660

tcaagttgca caaacactca aaacgctttt tgatgatttt tcttctataa aatctttctc 720

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tatcgccttt aattccttct tcttcttctg atttcttcaa agattcattt cttagagatc 840

tcagcttctg taagagtagg ctagctacca aaaaaaaaga aatagaaaaa aacattgatg 900

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<211> 1010
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<213> Arabidopsis thaliana

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aatattgttg gaagactgga caattatcgt tgaaactata gctatcacca agatacaact 180

ttttgtggaa aatcttggtg gcaattagaa actgttccca atctcgggca tgaaaatcgt 240

tattcaaata tttgtcaaca actagtgaat agtgatacag ctatatatgt ttgctaattt 300

attgaattat ttaatgttac gactttacgt aacaattatt taacgtctat tcttgtgtac 360

ctcacatttc ttatcgtcat gtctcatctc ttatattatt cacagtacac ccatctcttc 420

tcgctcactg tggaacctgt tgtcaattac tcgttttgca ttttattggt tttcccaatt 480

actctatcaa ttatttatca aaaaaaaaaa aatgaaacat ttactctata tattatttcc 540

gcaaacacaa attatactca catcaacata ttcaatacat ttttctagta atgtagaaca 600

actttacagt attctccaaa acgaaactct aattcaaaat ttacaagcag ataagccaaa 660

gataatagaa caacaaaacg ccaaattcta gttaagcaca caatctcaac gtgcactaaa 720

aacgagtggt gtaagtgaaa aatatcgtcg attataaaca ttatgggacc agtagcattt 780

gttgcaccaa tcgaaaacag acaagcacac atatctcctc atttctcatc tggcttctta 840

atcatttctc ataaccccac ctcattataa ataccaccct ttgcgtcaca catataaaca 900

tcacaaacta aacaataaac cataccataa aaaacatgaa aatcctctca ctttcacttc 960

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<210> 73
<211> 1383
<212> DNA
<213> Arabidopsis thaliana

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gattttctaa gattaattga ttctctgtct aaagaaaaaa agtattattg aattaaatgg 120

aaaaagaaaa aggaaaaagg ggatggcttc tgctttttgg gctgaaggcg gcgtgtggcc 180

agcgtgctgc gtgcggacag cgagcgaaca cacgacggag cagctacgac gaacggggga 240

ccgagtggac cggacgagga tgtggcctag gacgagtgca caaggctagt ggactcggtc 300

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cgcgggagcc gtcctaggtg caccggaagc aaatccgtcg cctgggtgga tttgagtgac 420

acggcccacg tgtagcctca cagctctccg tggtcagatg tgtaaaatta tcataatatg 480

tgtttttcaa atagttaaat aatatatata ggcaagttat atgggtcaat aagcagtaaa 540

aaggcttatg acatggtaaa attacttaca ccaatatgcc ttactgtctg atatatttta 600

catgacaaca aagttacaag tacgtcattt aaaaatacaa gttacttatc aattgtagtg 660

tatcaagtaa atgacaacaa acctacaaat ttgctatttt gaaggaacac ttaaaaaaat 720

caataggcaa gttatatagt caataaactg caagaaggct tatgacatgg aaaaattaca 780

tacaccaata tgctttattg tccggtatat tttacaagac aacaaagtta taagtatgtc 840

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gcaaaaacaa atataatgac aaggcaaaga tacatacata ttaagagtat ggacagacat 1080

ttctttaaca aactccattt gtattactcc aaaagcacca gaagtttgtc atggctgagt 1140

catgaaatgt atagttcaat cttgcaaagt tgcctttcct tttgtactgt gttttaacac 1200

tacaagccat atattgtctg tacgtgcaac aaactatatc accatgtatc ccaagatgct 1260

tttttattgc tatataaact agcttggtct gtctttgaac tcacatcaat tagcttaagt 1320

ttccataagc aagtacaaat agctatggcg agttccgttt tctctcggtt ttctatatac 1380

ttt 1383

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<211> 180
<212> DNA
<213> Brassica

<400> 74
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tgcacttgcg aacaacatac ttgctgaaca ccatatgtta tgttggcagg gtgagaaatt 120

aatcacgtgt agatatagaa gtagtagaca aatgatatag gtttgtggga atgaattaat 180

<210> 75
<211> 480
<212> DNA
<213> Arabidopsis thaliana

<400> 75
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gagagtctca tggagcagag gaaacgtaaa cggatgctct caaaccgtga atctgcaagg 120

agatcaagaa tgaagaaaca aaagctccta gacgatctaa cggctcaggt taatcatctg 180

aaaaaagaga acacggagat cgtgacaagt gtcagcatca caacgcaaca ctacctaacc 240

gttgaagcag agaactctgt tctcagagct cagcttgatg aacttaacca caggctccaa 300

tctctcaacg acatcatcga gttcctcgac agtagcaaca acaacaacaa caacaacatg 360

ggcatgtgtt cgaaccctct ggttggtttg gagtgtgatg atttcttcgt gaatcagatg 420

aacatgtctt atattatgaa ccagcctctc atggcgtctt ctgatgcttt aatgtattaa 480

<210> 76
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<212> PRT

<213> Arabidopsis thaliana

<400> 76

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        35                  40                  45

Leu Leu Asp Asp Leu Thr Ala Gln Val Asn His Leu Lys Lys Glu Asn
    50                  55                  60

Thr Glu Ile Val Thr Ser Val Ser Ile Thr Thr Gln His Tyr Leu Thr
65                  70                  75                  80

Val Glu Ala Glu Asn Ser Val Leu Arg Ala Gln Leu Asp Glu Leu Asn
                85                  90                  95

His Arg Leu Gln Ser Leu Asn Asp Ile Ile Glu Phe Leu Asp Ser Ser
            100                 105                 110

Asn Asn Asn Asn Asn Asn Asn Met Gly Met Cys Ser Asn Pro Leu Val
        115                 120                 125

Gly Leu Glu Cys Asp Asp Phe Phe Val Asn Gln Met Asn Met Ser Tyr
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Ile Met Asn Gln Pro Leu Met Ala Ser Ser Asp Ala Leu Met Tyr
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<211> 36
<212> DNA
<213> synthetic

<400> 77
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<210> 78
<211> 39
<212> DNA
<213> synthetic

<400> 78
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